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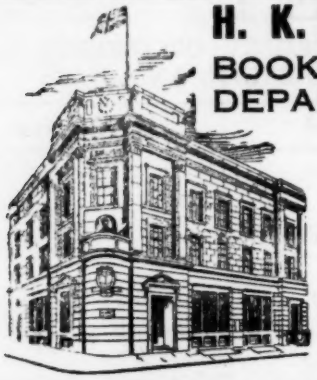

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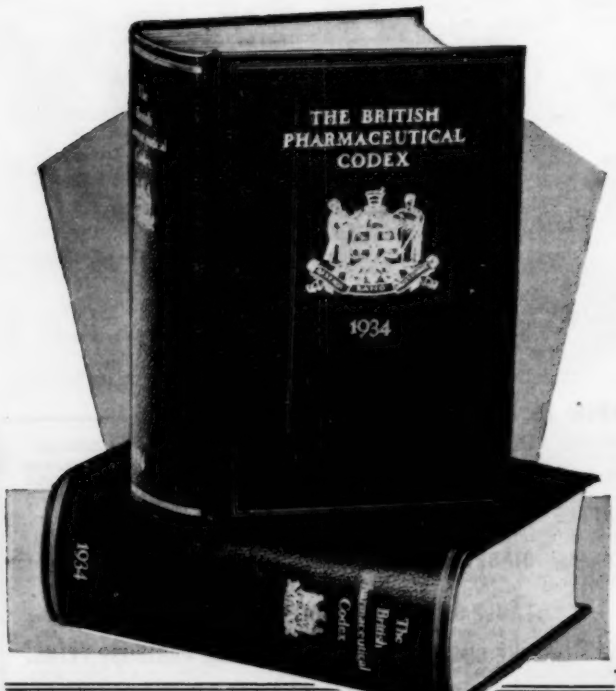

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ADDRESSES AND ORIGINAL ARTICLES

A CLINICAL STUDY OF HEADACHES *

By Sir Edmund Spriggs, K.C.V.O., M.D., F.R.C.P. Lond.
SENIOR PHYSICIAN, RUTHIN CASTLE

(*Concluded from p. 8*)

Migraine

That migraine is different from other headaches has probably always been recognised, though the word has been used at times to include habitual headaches generally. With a reservation about the word "diurnal" which calls to the mind the prevalence in those days of malaria, Galen's works provide a description as modern as any.

"Cephalæa is a diurnal headache with vehement occasions from small causes. The sufferer cannot endure noise, raising of the voice, the brilliance of light, or movement; but seeks quiet and a dark chamber on account of the severity of the pain. Some are as under the blows of a hammer, some as if crushed and distended; and in not a few there is pain to the roots of the eyes. There are, as in epilepsy, remissions when there is complete freedom."

One of the sufferers in this series, a man, used words which were almost the same—"as if hit with a hammer."

Migraine is the most frequent of headaches. In this series it forms the largest group, numbering 103 cases; to these may be added 14 migrainous subjects placed in other groups because the migraine factor seemed of lesser importance. Thus there were 117 migrainous persons among 500 patients with considerable headaches, or 23 per cent. Taking the whole period under review, and remembering the minor headaches which were omitted from this series, migraine was not present in more than 2·5–3 per cent. of the 4796 patients. This figure is lower than that given by some authors.

The characteristic features of migraine may be put under nine headings:—

1. It is periodic, using the word to mean not simply intermittent, but in the stricter astronomical sense of the (more or less) regular return of the same or similar phenomena.
2. It often begins in childhood or youth.
3. It is often hereditary. Then, in order, are:—
4. Premonitory symptoms, sometimes half a day or a day before.
5. The aura.
6. One or both-sided headache, which may be intense.
7. Nausea, vomiting, polyuria.
8. Exhaustion after severe attacks.
9. Complete recovery.

There is no part of the typical sequence which may not be absent. The aura, the headache, the misery, the nausea, the vomiting may each occur in the migrainous subject with none, some, or all of the others. And should the sufferer be subject to other aches or pains the migraine will seem to take them into its periodic course.

Fig. 3 shows the age at onset for the whole group and for the two sexes. In this series the latest age of onset was 62, in a woman. The oldest person admitted with migraine was a man of 66. He had had it on and off all his life, and was the subject of cervical arthritis. Four others were over 60. The well-known tendency of migraine to cease with advancing years can be illustrated by a gradation of these patients. The attacks may cease at any age without any special treatment, but are apt to recur with strain or ill-health, as many of the histories show. Treatment for the exciting cause or factor may again lead to relief.

EXCITING CAUSES

Any disturbance or strain may precipitate a migraine in a person who is at that time liable to it. The exciting causes are, therefore, as numerous and variable as are the circumstances of our daily lives. Fifty different causes, or in different wordings, were mentioned by these 103 persons.

Nervous causes, when put together, formed much the most frequent, 39 cases. They may be grouped as

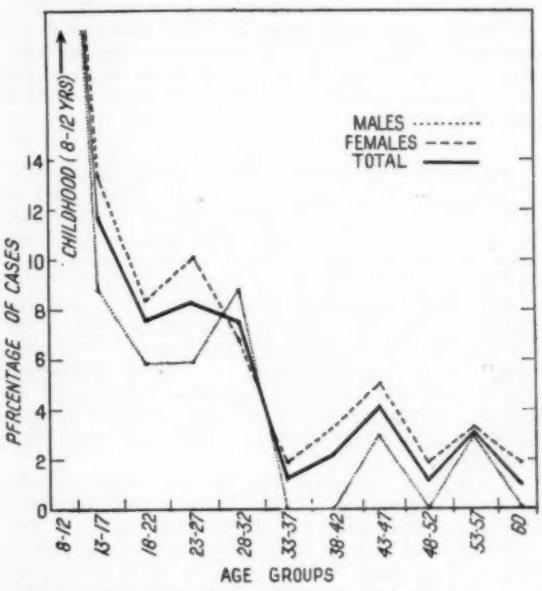

FIG. 3.—Age at onset of migraine. The incidence in the age-group 8–12 (not shown in chart) is 53·2 per cent. made up of males 67·6, females 45·0.

follows: upset, agitation, or anxiety, 15; excitement (including dinner or bridge party, talking, visitors), 14; working mentally too much or too long, 10.

Simple fatigue or getting tired—i.e., not specially mental fatigue—was mentioned by 17. In one even a walk would bring on a headache.

The next large group is that of food, some of the instances being typically allergic or atopic. There were 18 out of the 103 who recognised that the wrong food would bring on a headache.

The main causes they gave were rich food, creamy things, alcohol, port; and the following foods were each mentioned once: pork, ham, beef, eggs, nuts, roughage. Tobacco was given as a cause once. The skin tests, and a careful trial, are valuable in the diagnosis of allergic and atopic exciting causes. It appears, however, from these numbers that care should be taken in unduly restricting diet by guesswork. Some of these patients had for a long time gone without certain foods in vain because some other person had been helped by that deprivation.

Other causes reported were: constipation, 9; indigestion or abdominal pain (various conditions), 7; motoring, 5; "journeys," 4; riding, 2; menstruation (before or after), 5. East winds and cold weather

* The Croonian lectures for 1935, delivered before the Royal College of Physicians of London on May 14th, 16th, and 21st. The lectures were illustrated by numerous case-histories and lantern slides.

were mentioned by 4, exertion in hot weather by 1. In 5 headaches were brought on by reading at night, any glare or strong light, or the cinema.

Sleep is as a rule the best cure of all for a migraine. It appears, however, sometimes as an adverse influence, for two or three were liable to headache if they slept too long in the morning. One young man had a regular morning headache, which was avoided when he was waked at 7 o'clock and took a walk before breakfast. Those who get a headache on a Sunday, of whom there were two in this series, one a doctor, probably belong to this group. One mentioned that a heavy sleep at night would bring on a headache and two an afternoon sleep.

The following exciting causes were mentioned by one person each—a particular place, a stuffy room, boredom, a dog barking.

In childhood the bilious attack or headache is liable to come on with the excitement of anticipation such as before an examination or a party. With advancing age anticipation is better borne and the headache will come on after the party. And with the further progress of years the nervous system can bear both the thought and the event without disturbance.

AURÆ

The best known prodromal sign, and the commonest in this series, is a feeling of unusual fitness. George Eliot wrote "I am dangerously well to-day." Other prodromal symptoms were tiredness, restlessness, poor sleep, depression, a distaste for food, indigestion, or "an undesirable sensation that I am in for it."

Just half the patients reported an aura, and the proportion was the same in each group. The auræ were mostly visual, one only was coloured, "a rainbow." Non-visual auræ were, in order of frequency, hot or sore eyes, dizziness, pressure or tension on one side, aphasia, soreness of scalp, pins and needles in arms and legs, stiffness, numbness, abdominal discomfort.

It has been suggested that the absence of an aura in many migrainous patients is due to the fact that migraine often comes on in the early morning and that the aura is over in sleep, or wakes the person and is forgotten. Whilst such a view cannot be disproved, the figures in this series lend it no particular support. In the first place 18 patients whose headaches came on in the daytime described no aura. They include some who have been subject to characteristic and severe migraine for many years, are good observers, and have had headaches coming on at all times of day without auræ. Secondly, of 33 patients whose headaches came on "on waking" or "in the early morning" 15 had auræ, 18 had not.

The symptoms of the mid-headache were then related in the order of frequency in the whole series, with details of illustrative cases. Most of the attacks were severe. In five there were mental symptoms at the height of the headache and two became maniacal for the time being, until controlled by morphia.

SITE

The site of the headache was often unilateral to begin with, passing in some cases over to the other side or becoming diffuse. In some it might start on either side, and the patient knew whether the attack would be severe or not according to which side was first painful. The ache was in most cases in the fore part of the head, the various main sites being mentioned in the following order: frontal, 25; eyes, 24; temporal, 24; diffuse, 13; vertical, 10; occipital or neck, 14; parietal, 3.

Of the 14 cases with migraine whose pain was in the occipital region 3 had a local cause in a complicating cervical arthritis and fibrositis. It is notable also that of the remaining patients whose migrainous headache was felt in the occiput or neck all had some gastric or duodenal affection—ulcer, gastritis, or delay, or of the colon—spasm with diverticulosis, disorder after partial colectomy, colitis.

AGE

It is common in medical writing, and migraine has received as much study and attention as any disease, to write of migraine as classical or idiopathic if arising in early life, and to apply some other term such as acquired or symptomatic migraine to that arising later. My experience suggests that, apart from the one feature of age at onset, the more thoroughly the case is inquired into the less clear the distinction becomes. It is recognised by all that true idiopathic migraine, excited by a variety of adverse influences, is more likely to be so excited at times of special strain. The onset of migraine in adolescence, for example, is ascribed to the strain of puberty, and afterwards that of entering on the serious business of life. But a greater strain may come later in the conduct of that business or from ill-health and may give rise to migraine then. Further, in some of the cases dating back to childhood a definite physical lesion was present, the treatment of which relieved and cured the headache. And, if too much stress be laid upon the distinction between idiopathic and symptomatic migraine, there is a danger lest the idiopathic cases may be regarded as definitely diagnosed and that further steps be not taken.

The following are examples of migraine arising in early life, recurring with new physical strains, and improving again with suitable treatment.

In a young woman of 27 migraine began with puberty at 14, at first about weekly, then at the periods. She had a nervous but sensible temperament. The headaches became worse with, in turn, appendicitis, duodenal ulcer, a love reverse, and extraction of teeth, improving as each was dealt with or endured. She is now happily married and headaches are few and less severe; but she finds it necessary to keep to a régime of regular rests and a plain anti-constipation diet.

A professional man suffered from migraine with aura till he was 50. He was then "fairly free" until, after a chill, he developed fibrositis at the age of 60. Typical migraine then returned. With treatment he improved greatly and now reports a year later that both headache and rheumatism are well.

The following is an example of migraine arising in later years.

An able man of 53, with no family history of headache, developed migraine on active service at the age of 41. He was a barrister, and his complaint on admission was that after feeling particularly fit and "following the exaltation that one gets in court" he would see flashes with partial blindness, succeeded in 20 minutes by a frontal headache on both sides. With the ache came photophobia, vertigo, discomfort in the abdomen, and constipation. He would persist with his work in court, but, if circumstances allowed, and especially the vomiting, which continued for hours, could sleep. Aspirin gave some relief. After the headache he was "done up." He was subject to constipation and some teeth were infected at the roots.

With treatment the headaches ceased for the time and he was better for some months, ascribed by him to "the nerve-steadying influence of the place." But attacks recurred in court. He therefore took a legal appointment involving important and responsible work, but out of court, and writes that though at times he gets "a migrainous condition, when I feel that the fumes of my

distemper are about me" yet the former severe attacks are avoided by this adjustment of life.

It has been stated that acquired migraine is more resistant to treatment. As regards the results of treatment while under immediate care these figures support that statement. But when later results are looked at there is a better proportion of good results in the group of migraine arising after 40.

In the two groups of 30 cases of migraine arising after 20 years of age and 11 after 40, the headaches were in all respects typical of migraine, except that they dated back in many a few years only. They were associated with a definite morbid state, physical or nervous, and were lessened or abolished by removal of the associated lesion or strain. It appears that at all ages up to the fifties, or even over, typical migraine may develop, following very various strains.

My opinion is that there is no real difference in severe cases such as are described here, between "true" and "acquired" migraine, and I venture to suggest that for clinical purposes the distinction should be abandoned.

PERSISTENT AND INTENSE HEADACHES

Most headaches are intermittent. Persistent, that is continuous, headaches were complained of in 45 only of the 500, that is, in 9 per cent. They were found, in order of frequency, in the following groups: organic intracranial, vascular, nephritic, psychasthenic, and mental.

Intense headaches, in which the headache is the only complaint or filled the field to the exclusion of other symptoms, occurred in 85 cases, 17 per cent. of the whole. They were distributed as follows: migraine 36, hyperpiesis 8, nephritis 6, sinusitis 6, eyes 5, rheumatic, nervous exhaustion 4 each, constipation 3, and smaller numbers in other groups.

Mechanism of Headache

To the mechanism of headache I shall refer only in so far as certain features of the cases under review seemed to bear upon that much discussed problem. Recent observations, both experimental and upon the human brain in long operations, during which the patient is under little or no anæsthetic for a good part of the time, show that the most sensitive areas are close to the vessels in the pia mater. This conforms to D. Waterston's work on the extreme sensitiveness of the outer coverings of arteries and their neighbourhood. The dura mater is less sensitive, and the radiations and grey matter not sensitive to ordinary stimuli. For a long time a vasomotor control of cerebral arteries was not demonstrated, but the work of Huber and the more recent confirmation of Penfield showed that nerves and nerve-endings are present along the vessels; also the experimental results of Forbes, Wolff, and Cobb that the pial vessels contract and dilate with stimulation of the sympathetic and vagus respectively.

The vascular theory of headaches, and especially of migraine, foreshadowed for at least two centuries, and well stated by E. Bramwell, was that a preliminary spasm of arteries, associated with the aura, was followed by dilatation at the stage of the pain, which is compared to that of hotache. The peripheral nerves involved are the intracranial branches of the fifth; and it is stated that no headache occurs on that side if the Gasserian ganglion is removed.

That a headache can be produced by vascular changes is probably accepted by all, and is supported by the interesting observations of G. W. Pickering and W. Hess upon the brief headaches following intravenous injection of histamine. The lecturer and his colleagues used subcutaneous injections of histamine frequently in giving fractional test-meals, and S. W. Patterson and J. H. Anderson had made notes of 50 consecutive cases of such injections; 44 of the 50 were not subject to headaches. In 12 of them headaches occurred after histamine, five of which were severe and of longer duration than those described by Pickering and Hess. In 6 of the 50 who were subject to headaches, 4 had a headache after histamine. In 2 the headache produced had the same features as the headache to which the patient was liable. This might mean that the mechanism of the histamine headaches was the same as that of the patients' own headaches, or simply that the injection of histamine acted as an exciting cause.

The vascular theory as at present stated does not seem to account fully for the duration of headaches, e.g., in some of these cases for 12, 24, or 48 hours. The explanation suggested, on that theory, is that as a result of ischæmia from spasm, followed by dilatation, œdema occurs around the vessels, with an increase of intracranial pressure which keeps up the pain and the vomiting. We do see painful spasm of arteries in other parts of the body and it is controlled by nerves, as shown by the benefit, in suitable cases, of sympathectomy. But those arteries are generally diseased. Do we see ischæmia with resulting œdema? Yes; but it cannot be repeated often without damage to the area concerned. It may be said that perhaps the capillary bed in the brain is so extensive that a better recovery can take place than in a peripheral area in a limb. But if so an ischæmic œdema would also occur less easily. Now the headache of migraine can, unlike the attacks of epilepsy, recur again and again throughout a long life without any evidence of cerebral damage. The subjects of migraine seldom become insane, and the headaches of the psychotic groups in this series were not migrainous. It is true that cerebral thrombosis has been reported as a equel of severe migraine, and there were at least three in this series who developed that condition. But cerebral thrombosis is not uncommon in elderly people, and the clinical features of the patients concerned did not satisfy the lecturer that the thrombosis was a result of the headache.

The long duration of certain headaches might be more easily explained by a consideration of the work of Dale and of Lewis upon the production of histamine and its effects, together with the theory of allergy. It is conceivable that in a sensitised area, owing to the combination of an antigen and cellular antibodies, with effusion through the capillary wall, the damaged endothelial cells might go on giving out histamine, with resulting further reaction, for a long time. The allergic reactions we are able to see—for example, urticaria—can pass away leaving no damage.

Although, as above mentioned, the grey matter is not sensitive to ordinary stimuli, yet the conception cannot be put aside that the tissue which perceives pain may do so independently of its sensitive coverings. If so a true functional headache may have its seat in the sensorium. But it must be admitted that errors of perception of other sensations than that of pain are, apart from insanity, uncommon.

MIGRAINE AND THE PITUITARY FOSSA

It has been observed (Timme) that in certain cases of migraine, especially those occurring severely with menstruation, the pituitary fossa is less roomy than normal; and it is suggested that the headache is a result of the swelling of the pituitary body in a

contracted space, which occurs at those times in association with ovarian activity. A. P. Thomson has published an interesting paper on these cases, describing several in which improvement followed the use of a suitable ovarian extract.

My colleague, O. A. Marxer, points out that a lateral view, taken alone, may be deceptive, and to establish that the pituitary fossa is really constricted antero-posterior as well as lateral radiograms must be taken.

Mr. Marxer has examined the pituitary fossa in 656 out of 3000 consecutive cases: 539 persons were not subject to headache; among these were 16 shallow or bridged fossæ (in 4 men and 12 women) = 3 per cent.: 117 persons were subject to headaches; among those were 4 shallow or bridged fossæ (all in women) = 3·4 per cent. In 35 of the 117 persons the headaches were migrainous: 2 of the shallow or bridged fossæ were in this group = 6 per cent. Both were in women; in neither was the headache especially menstrual.

In this series, therefore, the proportion of cases with a constricted pituitary fossa, though definite, was small, and was not much greater in the persons with headache than in those without them.

Treatment

The first aim of treatment is to abolish or influence what the lecturer had called the second order of causes—namely, any condition or disease, physical or mental, which tends to depress the health. The treatment, therefore, medical and surgical, varies with each group of patients according to the diagnosis made, indeed with each patient. Many examples were given in reviewing the various groups.

No habitual headache, whether life-long or arising in adult life, should be accepted as a necessity to be simply palliated and endured, until every possible source, not only of physical but also of mental and psychical disorder, has been excluded so far as possible by an investigation and by appropriate treatment.

In habitual headaches, and especially in migraine, where no removable cause can be found, the establishment of a regular régime of rests, exercise, food, and, when possible, peace of mind, is of first importance. The Galenical writings say the sufferer "must have sleep, happiness, and quiet, and avoid noise, strife, and wine bibbing." In those past the full energy of midlife, a valuable lesson to learn is that an hour's rest, alone, on a couch, or, better, a bed, with sleep if possible, sometime in the middle of the day, will increase the power to work and lessen strains. The itch to be doing something all the time is a fosterer of headaches. Many patients in reply to inquiry write as did an intellectual overactive man, who used the words: "the greatest help has been in learning how to live."

In women the menopause comes to the aid of many, but not always if other strains go on. An artificial menopause has been successful in some, a disappointment in others.

Measures found of special value between attacks in this series include, besides the regulation of rests, work and exercise: reduction of tobacco, of coffee, and the avoiding of skin-sensitive foods and sometimes of other foods. Of drugs gardenal or luminal is valuable. Many find gr. ½ twice a day, especially at times of stress, a useful preventive. Calx sulphurata, an ancient remedy, has been very helpful in some. One grain, twice a day to begin with, is reduced when the subject becomes odorous of sulphides. The drug should be continued for several months; later gr. 1 once or twice a week may be enough. In others of this series calcium lactate, grs. 5–10 t.d.s. seemed to be followed by benefit. Strychnine, arsenic, sodium glycocholate, pituitary, thyroid, ovarian preparations, eucortone, insulin, peptones, calcic protein injections, a combination of iron, copper, and vitamin D, desensitisations—all are recorded as having been followed by good in suitable cases.

TREATMENT OF THE ATTACK

In almost all several methods of treatment have been used. In migraine alone 35 different combinations of physical and medicinal measures are noted as having been successful in different people in arresting or relieving the attack. The following summary was prepared by marking down each time that any given measure was noted, at the end of the period of treatment, as having been useful.

Physical means (in order of frequency of mention, as above).—Rest, sleep, dark, quiet, warmth, induction of vomiting, an enema, gastric lavage, liver pack, pressure on eye, temple, scalp. Capsicum, mustard leaf, thermogene to head and nape, poultices to abdomen, sneezing.

Food or drink (in order).—None, glucose and fluid, tea, glucose, fluid and orange juice, copious hot water, a meal (in a mild case).

Drugs (in order).—Bromides, gardenal, luminal (must be early). *Cachet* of aspirin, phenacetin āā grs. 2, pyramidon and caffeine āā gr. 1. Phenacetin. Acetanilide. A cachet of sulphate of quinine, pyramidon, phenacetin, and magnesia. Belladonna. Novalgin, allonal, dial, and similar drugs. Calomel, sulphate of magnesia, aperients.

Heroin and morphia are unsuitable drugs for habitual headaches. There are, however, a few, a very few, cases in which the physician should use them. As Freud wrote: "No remedy is proof against misuse; if a knife will not cut neither will it serve a surgeon." Ephedrine is a useful remedy in many. Adrenaline is recommended by T. C. Hunt, given very gradually under the skin—e.g., ℥ 1 a minute up to ℥ 10–15. We can confirm his report that headache may be arrested thereby. But some are upset by the cardiovascular effects and prefer other methods.

Among the combinations of measures recorded as having been successful are: In mild attacks the well-known procedure of complete rest at once, with a drug of the phenacetin group or aspirin before vomiting threatens. Or one of the above-mentioned cachets, sometimes a double one, and much tea. Three examples may be given of the combinations which led to arrest of severe headaches.

1. Rest, dark, an immediate enema, calomel gr. 1/10 hourly, 2 drachms of 50 per cent. sulphate of magnesia, and a pint of hot water an hour later.
2. Rest, sipping of hot water, a cachet, and an enema of glucose saline.
3. Rest, dark, no food or drink, phenacetin, and a mustard leaf to the nape.

In a case of the type of clavus hystericus, in which the patient became maniacal, gr. ¼ of morphia was given two hourly until asleep; and in the meantime an enema of glucose saline, barley sugar, and insulin.

Dehydration of the brain, by magnesium sulphate in the bowel, or more thoroughly, by putting concentrated saline into the blood, is perhaps worth a trial in severe cases.

[No direct surgical measure for the relief of headache was used in this series. The lecturer spoke of the experience of others from opening the dura mater and cutting nerves, of tying the meningeal artery, and of sympathectomy. He suggested that, on the experimental evidence, a simple trephine hole might be tried in some cases of intense and frequent headache.]

Results

In habitual headaches, and especially migraine, any large reduction in the number and severity of the attacks is a good result.

The following figures are compiled from the records of my colleagues contained in the reports to the family doctor at the end of the stay of each patient.

Immediate result of treatment of 327 patients from three weeks to two months or more.

		Per cent.
No (or slight) headache	216	= 66·1
Much improvement	93	= 28·4
No improvement	11	= 3·4
Worse	7	= 2·1

The test, in the case of those in whom no one causative factor can be eliminated, comes when the patient resumes ordinary life. The returns from the inquiry as to present state, for which thanks are due to a large number of professional brethren, are still arriving. Up to the present the figures are :—

Present state known in 268; 213 are alive; 55 are dead.

In 179 of the 213 alive definite reports upon the symptom of headache have been furnished.

		Per cent.
Report no (or slight) headache	72	= 40·2
Much improved	67	= 37·4
The same	30	= 16·8
Worse	10	= 5·6

In reviewing ancient and modern methods of treatment, some valuable weapons have of late been added to our armoury. None is suitable for all cases and there are no miracles. The way to treat headaches is to find out what is wrong and try to put it right. My feeling after this inquiry calls to mind the old story, which used to be in the German grammar book, of an aged man who called his sons to his bedside and said: "There is treasure in the vineyard. Dig." And they came closer, asking: "Where shall we dig?" But, his breath failing, their father whispered "Dig," and passed away. They dug here, and there, then the parts between, and at length the whole vineyard. And they found no gold. But the next year the yield of grapes was threefold.

REFERENCES

Auerbach, S.: Headache, London, 1913.
Bramwell, E.: Brit. Med. Jour., 1926, ii., 765.
Crookshank, F. G.: Migraine and Other Common Neuroses, London, 1926.
Dale, H. H.: Brit. Med. Jour., 1934, ii., 1161.
Forbes, H. S., and Wolff, H. G.: Amer. Jour. Physiol., 1929, lxxxix., 266.
Galen: Lipsiæ, 1833, vol. viii., p. 204.
Harris, W.: Brit. Med. Jour., 1908, ii., 297.
Hunt, T. C.: THE LANCET, 1933, ii., 279.
Liveing, E.: On Megrim, Sick Headache, and some Allied Disorders, London, 1873.
Pavey-Smith, A. B.: THE LANCET, 1923, ii., 503.
Penfield, W.: Arch. Neurol. and Psychiat., 1932, xxvii., 30.
Pickering, G. W., and Hess, W.: Brit. Med. Jour., 1932, ii., 1097.
Thomson, A. P.: THE LANCET, 1932, ii., 229.
Timme, W.: Brit. Med. Jour., 1926, ii., 771.
Waterston, D.: Papers of James Mackenzie Institute, St. Andrews, May, 1933.

WATFORD PEACE MEMORIAL HOSPITAL.—The accommodation and equipment of this institution are being taxed to the utmost, and it is hoped to erect a three-storey building which will provide room for 52 ordinary patients and 19 private patients. No estimate of the cost of the new buildings has yet been given, but it is said that considerably more than the £35,000 which is in hand will be required. A nurses' home is also urgently wanted. The average cost of in-patients for last year was £2 18s., and the contributory scheme collected £9608.

FURTHER EXPERIENCES OF SERUM IN THE TREATMENT OF PNEUMONIA

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IN September, 1933, a detailed report[1] was published on the use of concentrated antipneumococcus serum in a small series of cases of Type I. lobar pneumonia at Selly Oak Hospital. During the period Oct. 1st, 1933, to April 30th, 1935, the sputum of almost every case admitted to the hospital with the diagnosis of pneumonia has been examined for the purpose of typing the pneumococcus, and 101 cases of Type I. pneumonia, together with 20 cases of Type II. pneumonia, have been treated with intravenous serum. In all, 367 adult patients were "typed," but 53 of these proved subsequently not to have pneumonia, and it is significant that in all but one of the 53 the pneumococcus in the sputum belonged to Group IV. (i.e., did not agglutinate with serum Types I., II., or III.). The ultimate diagnoses in these cases included pulmonary tuberculosis, pulmonary embolus, asthma, bronchitis, infective endocarditis, coronary thrombosis, pyæmia, and pyelitis.

Seven cases of typical primary pneumonia which showed no pneumococci in the sputum, in spite of repeated examination, are excluded from the analysis, and 11 cases in which meningitis was diagnosed within twenty-four hours of admission to hospital are separately described. The latter have been included, however, in the analysis of types, since pneumonia was present in all of them.

GENERAL OBSERVATIONS

The type-incidence and gross mortality of the remaining 307 cases, 79 (26 per cent.) of which were females, are shown in Table I. A clinical or post-mortem diagnosis of broncho-pneumonia as distinct from lobar pneumonia was made in 24 cases, analysed in Table II., where it will be seen that 20 belonged

TABLE I.—*Type and Sex*

Incidence and mortality in 307 consecutive cases of pneumonia

Type	I.		II.		III.		Group IV.	
Total cases and percentage	131 (43)		58 (19)		23 (7)		95 (31)	
	M.	F.	M.	F.	M.	F.	M.	F.
Percentage	103 —	28 21	45 —	13 22	15 —	8 35	65 —	30 32
Gross mortality and percentage* ..	38 (29)		18 (31)		7 (30)		18 (19)	

* Including cases of meningitis.

TABLE II

Classification of cases diagnosed as broncho-pneumonia

Type	I.		II.		III.		Group IV.	
	M.	F.	M.	F.	M.	F.	M.	F.
Recovered	—	1	—	—	1	1	8	5
Died	—	—	—	—	1	—	5	4
Total	1		0		3		20	

M = male; F = female.

to Group IV., of which 7 were fatal, giving a 35 per cent. mortality, contrasting with a 19 per cent. mortality for all Group IV. cases, and a 13 per cent. mortality for Group IV. cases of lobar pneumonia.*

TABLE III.—*Type, Sex, Empyema, Meningitis*

The incidence of recoveries and deaths for all types, and recoveries and deaths in treated and untreated cases of Type I. and Type II. cases

Type ..	I.				II.				III.		Group IV.	
—	Died		Rec.		Died		Rec.		Died	Rec.	Died	Rec.
	S.	ns.	S.	ns.	S.	ns.	S.	ns.				
Male ..	22	10	59	12	6	9	11	19	5	10	12	53
Female ..	5	1	15	7	0	3	3	7	2	6	6	24
Total ..	27	11	74	19	6	12	14	26	7	16	18	77
Meningitis												
Male ..	6	2	0	0	0	1	0	0	0	0	1	0
Female ..	1	0	0	0	0	0	0	0	0	0	0	0

Empyema			
Streptococcus ..	1	2	0	5
Pneumococcus ..	11	5	0	2

Rec. = recovered; S. = serum given; ns. = no serum given.

Table III. sets out the sex-incidence and mortality of all the 307 cases analysed; a more detailed study of Type I. and Type II. cases will be found below.

From a city of over a million inhabitants, Selly Oak Hospital receives roughly a third of all cases of pneumonia sent to hospital, drawn from all parts of the city; conclusions drawn from the study of cases in the hospital are therefore some guide to conditions throughout the city area. The seasonal fluctuation is approximately the same for all types, March and April showing the highest incidence, August and September the lowest, but epidemics of one type or another, lasting over two or three weeks, are often observed.

Children.—It has frequently been stated, on the basis of examination of throat swabs during acute pulmonary infection, that Types, I., II., and III. are relatively uncommon in childhood. Since the pneumococcus can be cultured from the throats of most healthy persons, such a conclusion was speculative, and the results of typing the pneumococci found in pleural fluids, cerebro-spinal fluid, and sputum, give quite a different picture. Fairbrother [2] has recently shown an incidence of 87 per cent. Type I. pneumococcus in empyema occurring in school-children, in a series of 59, and a series of 25 children under the age of fourteen at Selly Oak Hospital during the period under review has given a type-incidence which corresponds very closely with that found in adults, i.e.:—

	I.	II.	III.	IV.
Cases	11 ..	5 ..	2 ..	7
Per cent. ..	44 ..	20 ..	8 ..	28

Meningitis.—Recovery from pneumococcal meningitis without serum has been reported [3] after cisternal drainage, and there have been a few reported recoveries of Type I. cases after the use of concentrated serum intrathecally. None of the cases treated at Selly Oak Hospital during this period has recovered, but results in at least one case (to be reported separately) have been sufficiently striking to make it an obvious duty always to attempt treatment when the type proves to be I. or II. Of 11 cases of pneumococcal meningitis diagnosed within twenty-four hours of arrival, one Group IV. case followed trauma, one Type II. case was otitic, and the remaining 9 were due to Type I. pneumococcus. In 7 of the latter serum treatment was attempted, the routes used being intravenous, intrathecal, and intracisternal; the largest dose given to any one patient was 420,000 units, over a period of one week.

Empyema (diagnosed in life or post mortem) developed in 26 cases out of 307, an incidence of 7 per cent. Table III. shows the type-incidence and organism cultured from the pus: where this was the pneumococcus it was always of the same type as that occurring in the sputum. It is noteworthy that streptococci were found in the pus in 5 out of 7 cases of Group IV. pneumonia, as compared with only one among 12 Type I. cases, and 2 among 7 Type II. cases.

Taking this information together with the figures for those cases of Group IV. infection which proved to be either broncho-pneumonia or not pneumonia at all, it seems legitimate to deduce either (*a*) that if it were practicable to differentiate all Group IV. pneumococci into their true types, fatal cases associated with Group IV. pneumococci would correspond with one of the rarer virulent types, or (*b*) that all Group IV. pneumococci are relatively avirulent, and that some other organism, possibly the streptococcus, is causative in the fatal cases in which Group IV. pneumococci are found. I am not, however, in agreement with some writers who contend that it is possible to make a clinical diagnosis of type, since many characteristic cases of lobar pneumonia occurred in the Group IV. series.

Typing.—The direct method of typing is of great value in expediting treatment: if sputum is immediately available, a result can be obtained and treatment begun in less than an hour. Discrepancies between results of direct typing and of typing by mouse passage occur, but are rare, and the correction necessary is almost always to convert a directly typed Group IV. (i.e., no capsule swelling observed) into one of Types I., II., or III. The wet direct method,[4] using methyl-violet as a stain, is always used at Selly Oak, and rabbit serum appears to give rather more rapid and obvious capsule swelling than horse serum. Direct results are very easily obtained from cerebro-spinal fluid and pus.

Type III. Pneumonia.—While a rather higher proportion than for other types occurred in old age, Type III. pneumonia was found at all ages, and the gross mortality was slightly less than for Type II. cases. A relatively small elevation of temperature was characteristic, and some cases, particularly in old age, were apyrexial; but no other clinical peculiarity was observed in Type III. cases, and apyrexial cases were seen in infections by Types I. and II. and by Group IV. No cases of empyema or meningitis occurred among the 23 patients with Type III. pneumonia.

SERUM TREATMENT

Type I. serum.†—Excluding the 7 cases of meningitis, 94 cases of Type I. pneumonia were treated with intravenous concentrated serum. There were 20 deaths in this group, giving a 21 per cent. mortality for treated cases. During the same period there were

* If cases of broncho-pneumonia are excluded, the total number analysed becomes 283, with a type incidence:—

I.	II.	III.	IV.
130 (46%) ..	58 (20%) ..	20 (7%) ..	75 (26%)

† The serum employed was prepared by the Lister Institute of Preventive Medicine, and supplied by Messrs. Allen and Hanburys Ltd. It contained 10,000 international units in about 3·5 c.cm.

admitted to the hospital a further 30 patients with Type I. pneumonia who were not treated with serum.

The reasons why these patients did not receive serum were various: (*a*) crisis shortly after admission, and a clinical judgment that serum was superfluous (not always, unfortunately, justified by the event); (*b*) the patients being under twenty and the prognosis therefore being good: I am now personally of the opinion that it is not justifiable to withhold serum on account of age; (*c*) delay in typing, or absence of sputum; (*d*) the temporary charge of wards by acting physicians who were not in agreement as to the value of the treatment.

Two of these patients had meningitis on arrival, and if these are excluded, there were 9 deaths, with a mortality of 32 per cent.

Of 28 patients given serum before the end of the third day from the onset of symptoms, 3 died (12 per cent. mortality); in one of the fatal cases a severe untreated hypochromic anæmia had been present for some months, and in another the pneumonia was a complication in chronic nephritis. Of 20 cases treated on the fourth day, 5 died (25 per cent. mortality), including one delayed death due to erysipelas originating in an empyema wound, and one death from pneumonia in a patient with recent rheumatic carditis. Of 15 cases treated on the fifth day, 3 died (20 per cent. mortality). Of 21 cases treated on the sixth day or later, 5 died (24 per cent. mortality). No complicating conditions of importance were present in the fatal cases in the fifth and sixth day groups. A few cases have been excluded from this analysis on the grounds of uncertainty as to the day of onset of symptoms.

The results of treatment begun during the first three days of illness are thus twice as good as the results of treatment delayed to later days. This experience is in accordance with the published data of larger series in the United States, and is comparable with the results obtained in the treatment of, for example, diphtheria by antitoxin; but it must be remembered that, other things being equal, a definitely worse prognosis must always be given when a case of pneumonia is removed to hospital after the first few days of the disease, because of the shock of removal at that critical period. The number of Type I. cases received at Selly Oak (since typing was first performed as a routine) and receiving no serum, has been too small to allow me to supply comparable figures.

The average dose of serum was, in the cases which recovered, 57,000 units, and in the fatal cases 90,000. The smallest total dose employed was 20,000, and the largest 260,000, in a case which ultimately proved fatal.

Type II. cases.‡—The number of cases treated with serum is proportionately smaller than for the Type I. cases, and too small for use as statistical evidence. Twenty cases received serum, with 6 deaths (30 per cent.); in the same period, 37 cases were admitted and received no serum (one case of meningitis is excluded), with 11 deaths (30 per cent.). Nine patients received serum before the end of the third day from onset of symptoms, of whom 2 died (22 per cent.); 9 received serum after the end of the third day, and 4 of them died (44 per cent.). The average dose of serum given in cases which recovered was 63,000 units; and to fatal cases, 75,000. The minimum total dose given was 20,000 and maximum 140,000, to a patient who recovered.

Clinical impressions of the effects of serum.—In 1933 I referred to the frequency of untoward reactions after the intravenous injection of Type I. serum (tachycardia, rigors, hyperthermia). Using a different batch of serum, such reactions have subsequently been entirely absent, and that some factor in the serum itself was primarily responsible is conclusively shown by the fact that reactions were not seen when trials were made with the original batch after reconcentration by a different method, at the Serum Department of the Lister Institute. Not all patients, however, gave reactions with the original batch, so that conditions obtaining in the patient's tissues must be held to be of some importance; reasons were given in the first paper for supposing that the reactions were not "allergic," and that therefore methods designed to "desensitise" were of no avail. No precautions to ascertain the degree of sensitivity to horse-serum were employed in the present series. Three patients treated with Type I. serum showed a mild urticaria 8–12 days after receiving serum.

Unpleasant reactions with Type II. serum, however, have been frequent, and of the same nature as those previously described for Type I., except that hyperthermia was not observed. The question arises as to what extent unpleasant and possibly dangerous reactions are connected with efficacy in therapeusis. While it is true that an immediate crisis was observed, following such reactions, in many cases in the first series, and in Type II. cases in the present series, equally spectacular results have been often seen in Type I. cases in the present series which showed no symptoms of "shock" or rigors. Subjective sensations of improvement after the first dose of either serum were usual.

I still consider that the blood culture gives the best guide both to prognosis and to the need for serum treatment. Repeated blood cultures, however, in a few of the fatal cases of both Type I. and Type II. pneumonia receiving serum, did not show pneumococci, and the reason for the failure to respond to serum in these cases is not clear. It is my opinion, and that of my colleagues also, that the clinical rules for prognosis in pneumonia are very far from being infallible, and that the blood culture, in spite of these occasional discrepancies, is a more certain guide. Abscess-formation, whether in pleura, lung, pericardium, or elsewhere, appears to mark the end of the usefulness of intravenous administration of serum, and was present in those fatal cases treated with serum but not showing septicæmia, in which post-mortem examination was allowed. Several instances of sterilisation of the blood (some only temporary) following serum treatment, were observed.

An attempt was made, following the reports of Francis,[5] to make use of intradermal reactions to capsular substance as a guide to serum dosage; the process was found to be too time-consuming for routine use, and in the few patients tested, the reactions were not sufficiently clear to afford useful information.

CONCLUSIONS

The extended use of concentrated serum in the treatment of pneumonia at Selly Oak Hospital has confirmed the earlier impressions of its value. I consider that there is a strong probability that the use of larger doses of Type II. serum, which the fear of severe reactions at present makes difficult, would produce as good results as those obtained with Type I. serum. The need for very early treatment is obvious.

‡ The serum employed was supplied by Messrs. Burroughs Wellcome and Co., and contained 20,000 units in about 9 c.cm.

REFERENCES

1. Leys, D: THE LANCET, 1933, ii., 748.
2. Fairbrother, R. W.: Arch. Dis. Childhood, 1935, x., 25.
3. Bedell, C. C.: Jour. Amer. Med. Assoc, 1934, ciii., 820.
4. Sabin, A. B.: Ibid., 1933, c., 1584.
5. Francis, T., Jun.: Jour. Exper. Med., 1933, lvii., 617.

A METHOD OF MEASURING THE AIRWAY OF THE NOSE

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Into one nostril a nipple-shaped tube is inserted so as to fit the nasal opening in airtight fashion. A glass tube, with a rubber nipple fixed on its end, answers the purpose; the orifice cut in the end of the nipple should be about 5 mm. in diameter. This tube is connected with a water manometer, the other end of the tube of the manometer is connected to a tambour set to write on a drum.

To provide a simple instrument for clinical use the drum is dispensed with, and the excursion of the meniscus—that is of the column of water in the manometer—is noted as each breath takes place through the other nostril, the mouth being kept shut.

A record of the manometric excursion produced by breathing is taken first from one nostril and then from the other. When the breathing is through a partially obstructed nostril the excursion will be greater because of the greater pull of the expanding lungs on the nostril in which the recording tube is inserted. Now the excursion of breathing through the normal nostril can be made equal to that through the partially obstructed side, by narrowing the external opening of the former. This can be effected by inserting into it a very short length of nipple-shaped tube. A number of such tubes are used, each having a different sized opening. The openings experimented with increased as follows:—

Diameter.	Surface area (approximate).
2. 6 mm.	5¼ sq. mm.
3. 5 ,, ...	9½ ,, ,,
4. 2 ,, ...	14 ,, ,,
4. 9 ,, ...	19 ,, ,,
6. 0 ,, ...	28½ ,, ,,
11. 0 ,, ...	95½ ,, ,,

In place of these tubes one tube can be used to which a slit is attached, which can be varied in width by means of a screw, a gauge being provided to indicate the size of the slit.

It must be borne in mind that when the recording tube is inserted into the more obstructed side of the nose the wing of the nostril is pushed out. This relieves the obstruction if this be at the ostium internum, and makes the taking of the record possible. Supposing it is found after insertion into the normal nostril of the tube, with 9½ sq. mm. opening, that the excursion of the breathing through that side becomes equal to the excursion through the partially obstructed side, then the conclusion is reached that the area of the breathing passage on the partially obstructed side is no larger than 9½ sq. mm. (Figs. 1 and 2).

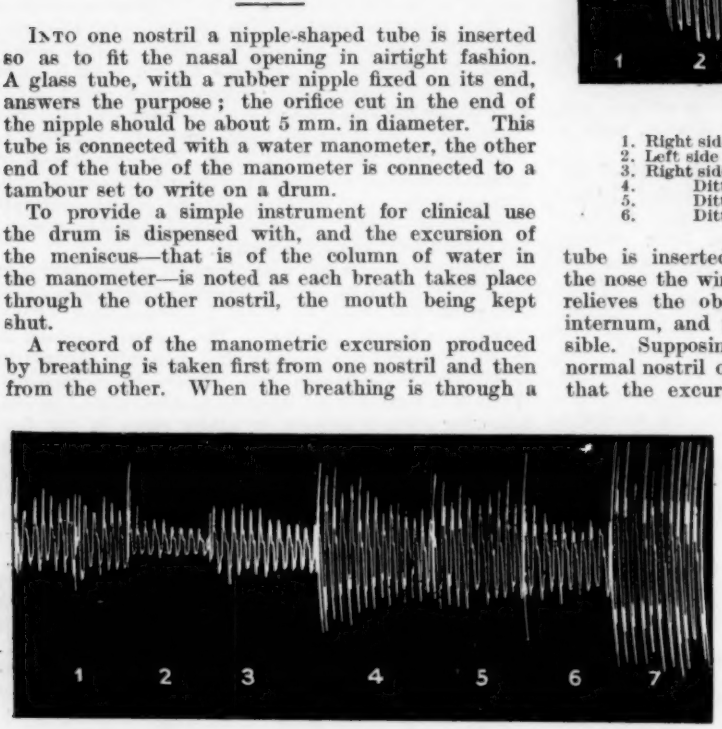

FIG. 1.—Subject T

1. Right side of nose.
2. Ditto with 28·5 sq. mm. tube, respiration easier.
3. Ditto with 19 ,, ,, ,, ,, ,,
4. Ditto with 14 ,, ,, ,, ,, increased.
5. Left side of nose.
6. Ditto with 19 sq. mm., respiration easier.
7. Ditto with 14 ,, ,, tube, respiration much increased.

The right side of the nose has naturally the freer air-passage.

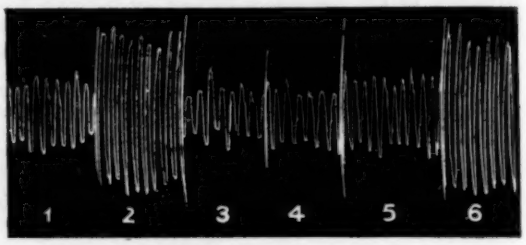

FIG. 2.—Subject L

1. Right side of nose.
2. Left side of nose (naturally partially obstructed).
3. Right side of nose with 28·5 sq. mm. tube.
4. Ditto with 19 ,, ,,
5. Ditto with 14 ,, ,,
6. Ditto with 9·5 ,, ,,

We have seen that in the case of a nostril partially obstructed at the ostium internum the insertion of a tube by pushing out the wing relieves the obstruction (Figs. 1, 5, 6). The insertion of a tube can therefore be found, the orifice of which causes a breathing excursion equal to that when there is no tube in this nostril.

Next, in the case of either nostril of a subject, the tube can be found which just causes an increase of excursion obtained during quiet respiration when the subject is sitting at rest.

The size of opening sufficient for normal quiet respiration in most subjects is found to be about 14 sq. mm. When the tube of 19 sq. mm. or larger opening is inserted it makes the breathing easier by pushing out the wing (Figs. 1 and 2). A larger opening than 19 sq. mm. is required when the subject does exercise—e.g., stepping on to a box 6 inches high twelve times a minute. By increasing the exercise

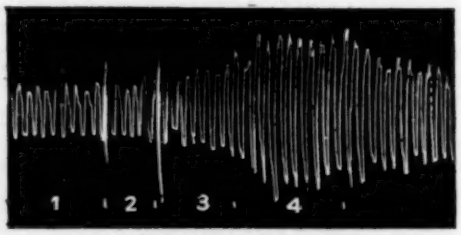

FIG. 3.—Subject H

1. Right side of nose (unobstructed).
2. With heater on no effect.
3. Right side of nose obstructed with 14 sq. mm. tube.
4. With heater on (increased excursion).

the normal nostril was found to have an opening of about 30 sq. mm.—the size of the end of a pencil.

After inhalation of a solution containing adrenaline the relief of the partially obstructed side of the nose was such that the excursion is made almost equal to that on the normal side. The method thus shows the effect of treatment. (Compare Figs. 1 and 2 with Fig. 6.)

An opening as small as 5½ sq. mm. may suffice, at any rate for a short time, for an adequate supply of air to the normal subject when at rest, but the excursion becomes greatly increased, the inspiration and expiration being prolonged at the height of each. In some the respiration is made less, and in others more, frequent as the result of such partial obstruction.

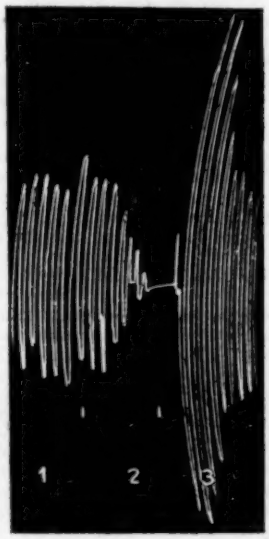

FIG. 4

1. Left side of nose (naturally partially obstructed).
2. With heater on air-way totally obstructed.
3. Respiration following turning off of heater.

The irradiation of the skin with a small source of dull red heat (an electric coil 4 in. by 2) increases the partial obstruction (Figs. 3 and 4), and in about 50 per cent. of subjects the switching on of a bright source, such as a small tungsten arc, held some two feet away, or an incandescent lamp, relieves the obstruction (Fig. 5). After adrenaline inhalation the heater has no effect (Fig. 6). The method lends itself very well to the demonstration of these phenomena and to the refutation of the assertion made by Dufton and Bedford,[1] and of Winslow and others,[2] that "nose opening" rays[3] do not exist. Dishoek[4] has confirmed such ray action.

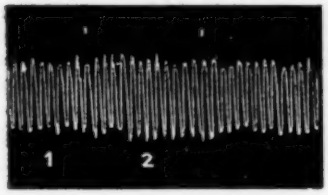

FIG. 6

1. Left side of nose after adrenaline inhalation.
2. Turning heater on had no effect.

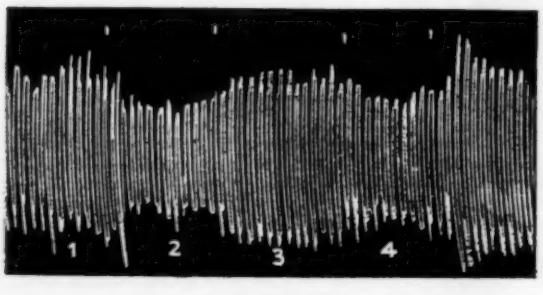

FIG. 5

1 and 3. Left side of nose (naturally partially obstructed).
2 and 4. Respiration made easier by turning tungsten arc on to the skin.

In the case of one asthmatic subject it was found that a tube opening of 28½ sq. mm. produced an increase of breathing excursion, while one of 14 sq. mm. may be required to effect this in normal people. In the case of two other asthmatics one side of the nose was found to have an obstruction equal to a tube with an opening of about 5½ sq. mm. It is obvious that the effect of any operative procedure for relieving such obstruction can be measured by the method.

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REFERENCES

1. Dufton, A. F., and Bedford, T.: Jour. of Hyg., 1933, xxxiii., 476.
2. Winslow, C. E. A., Greenburg, L., and Harrington, L. P.: Amer. Jour. Hyg., 1934, xx., 195.
3. Hill, L.: Jour. of Physiol., 1932, lxxiv., 1, and 1932, lxxv., 8; Quart. Jour. Exp. Physiol., 1933, xxxiii., 35; Jour. of Hyg., 1935, xxxv., 75.
4. Dishoek: Jour. of Hyg., June, 1935, xxxv.

APLASTIC ANÆMIA

TWO FATAL CASES TREATED BY BLOOD TRANSFUSION AND PENTOSE NUCLEOTIDE

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THESE two cases are reported in view of the present interest in pentose nucleotide therapy in granulocytopenia or "agranulocytosis." In aplastic anæmia, as is well known, granulocytopenia may form part of the blood picture, in addition to diminution of red cells and platelets. In the cases here recorded an attempt was made to influence this granulocytopenia by pentose nucleotide therapy, while maintaining the red cell count at a reasonable level by blood transfusion. The attempt failed and both patients died without any real improvement having taken place.

Mills[1] divides aplastic anæmia into primary or idiopathic, and secondary groups. Primary aplastic anæmia he regards as very rare. The secondary group contains those cases which follow the administration of various toxic substances such as benzene and arsenobenzene derivatives. Excessive exposure to radiation from radium or X rays may also give rise to an aplastic anæmia. The prognosis is extremely poor in all varieties which attain any degree of severity, and although many remedies have been suggested and tried, blood transfusion seems to be the only one which has produced any benefit, and this is usually no more than temporary.

McCarthy and Wilson[2] have reported 34 cases of aplastic anæmia, 17 of which were treated by blood transfusion alone, and of these only 3 recovered—a mortality of 83 per cent. They advocated the use of pentose nucleotide as a supplement to blood transfusion, but gave no records of cases in which it was tried. Their observations referred particularly to aplastic anæmia following the administration of arsenobenzene (arsphenamine) derivatives. The first case described below was one of this kind; in the second no causal factor was discovered.

THE TWO CASES

CASE 1.—A single woman, aged 30, was admitted to St. Stephen's Hospital on Sept. 22nd, 1933, with a primary

labial sore which had been present for three weeks. The blood Wassermann and Kahn reactions were strongly positive. There was a slight sore-throat and headache on admission, but no rash or obvious secondary lesion. There was nothing of note in the previous history of the patient. Apart from the syphilitic primary lesion she was perfectly well. No splenic enlargement could be detected and no abnormality was found in the cardio-vascular, respiratory, or nervous systems. Antisyphilitic treatment was begun, and in all nine injections of N.A.B. (neoarsphenamine) were given at weekly intervals, the first two doses being 0·45 g. and the rest 0·6 g. Nine injections of bismuth in the form of 1 c.cm. of Chlorostab were also given during the same period. These injections ended on Nov. 29th., 1933.

The subsequent course was as follows. Dec. 5th: patient developed severe bilateral quinsy, with cervical adenitis and high pyrexia; swab taken revealed streptococci, but no Klebs-Löffler or Vincent's organisms. 7th: quinsy on left side incised; other treatment consisted of hot fomentations and hydrogen peroxide and saline gargles; pyrexia still continued. 9th: some improvement in throat condition, but pyrexia was still high and patient looked severely ill and anæmic. Dec. 12th: throat improving and adenitis subsiding. 18th: blood count showed severe anæmia of normocytic type with marked granulopenia; throat still further improved but pyrexia continued. 19th: began a course of pentose nucleotide in daily doses of 1·4 g. intramuscularly; blood culture negative. Dec. 23rd: no improvement in blood picture; blood transfusion of one pint from a group II. donor; pyrexia continued; pentose nucleotide reduced to 0·7 g. daily. 27th: temperature slightly lower, and patient felt a little better, but no improvement in blood picture had occurred; slight bleeding per vaginam; pentose nucleotide stopped. 30th: blood transfusion one pint. 31st: blood transfusion one pint; patient no better and pyrexia still continued around 103° F.; no great improvement in blood picture. Jan. 1st: 1934, much worse, in a semi-comatose state. Jan 2nd: died at 1 A.M.

The blood counts are summarised in Table I.

TABLE I. (Case 1). *Blood Counts*

Date in 1933.	Red cells (millions)	Hb.	Colour-index.	White cells.	Polymorphs.	Lymphocytes.	Monocytes.	Eosinophils.	Basophils.
	c.mm.	%		c.mm.	%	%	%	%	%
Dec. 18	1·51	26	0·87	2000	22·5	69·5	7·5	0·5	—
,, 19	1·52	28	0·93	1100	—	—	—	—	—
,, 20	—	—	—	3100	—	—	—	—	—
,, 21	1·40	—	—	1200	24	67	6	2	1
,, 22	1·17	22	0·96	1300	25	69	6	—	—
,, 23	1·09	20	0·91	1700	—	—	—	—	—
,, 27	1·24	21	0·84	1100	18*	74	8	—	—
1934									
Jan. 1	1·78	32	0·88	1300	—	—	—	—	—

* Reticulocytes less than 1%.

This patient received eleven injections of pentnucleotide (Smith, Kline, and French) of 0·7 g. each. For the first four days two injections per day were given, and on the remaining days this was reduced to one injection of 0·7 g.

Post-mortem Findings.—External appearances: Large subcutaneous bullæ had rapidly developed overnight, and contained hæmorrhagic serous fluid; the whole body was grossly distended by gas formation. Pharynx: some œdema and ulceration of fauces. Trachea and bronchi: mildly inflamed, contained much frothy muco-pus. Pleuræ: numerous hæmorrhagic petechiæ; each cavity contained about a pint of serous exudate. Lungs: grossly œdematous. Heart muscle: very pale and flabby. Aorta: slight fatty streaking. Liver: very pale and fatty, and honeycombed by gas. Spleen: very pale and soft but not enlarged. Stomach and intestines: nothing of note. Kidneys: very pale with much cloudy swelling. Adrenals: marked diminution of cortical lipoid. Brain: very œdematous and affected by post-mortem gas-formation.

The right femur and a rib on section revealed marked pallor and fatty infiltration of marrow. On microscopical examination the bone-marrow was seen to be almost completely aplastic, with very few leucocytes and no erythroblastic tissue. There was nothing else of note beyond toxic visceral changes. Culture of the fluid from the subcutaneous bullæ gave no growth.

CASE 2.—A Jewish girl, aged 22, was admitted to hospital on March 9th, 1934, with a history of bleeding from the gums during the previous six weeks. This bleeding had been only occasional and never severe. There had also been bruising of the skin on slight trauma during the same period. The patient felt very exhausted and had been in bed for ten days before admission. Copious vaginal hæmorrhage was the reason for her being sent to hospital. There was nothing of note in her previous history and the menses had previously been normal.

She was very pale and obviously anæmic. There was copious bleeding from the gum margins and per vaginam, and numerous ecchymoses and petechial hæmorrhages over the trunk and limbs. There was no ulceration of the mouth or pharynx, and the liver and spleen were not palpable. A generalised soft systolic murmur was audible over the precordium. Blood pressure 102/80. Examination of other systems revealed nothing of note.

The course of the events was as follows. March 9th: high pyrexia; treated by hot vaginal douches and adrenaline swabs to gums; 10 c.cm. of hæmoplastin injected. 10th: blood count; bleeding checked to some extent by local treatment. 12th: blood picture much worse; a small transfusion of six ounces was given; the gums stopped bleeding after this but the vaginal bleeding continued, though less in amount; patient still bruised very easily; pentnucleotide 1·4 g. given intramuscularly. 13th: still bleeding slightly per vaginam; blood transfusion of one pint; pentnucleotide increased to 2·8 g. daily; still high continuous pyrexia 102°–103°. 14th: blood picture considerably improved as far as red cells were concerned; bleeding entirely ceased; blood transfusion of one pint, which was followed by a slight angio-neurotic œdema of the face. 15th: red cell count still further improved, but no improvement in white cell count; no further bleeding or ecchymoses. 16th: still no improvement in white cell count. 17th: commenced bleeding again from gums and vagina; blood transfusion one pint. 19th: general condition much worse; no remission of pyrexia, which ran between 103°–104°; some respiratory distress and slight signs of consolidation at pulmonary bases. 21st: patient comatose, bleeding from mouth again; died in evening.

Pentnucleotide was continued up to the day of death; and in all 21 g. were given. The blood counts are summarised in Table II.

TABLE II. (Case 2). *Blood Counts*

Date in 1934.	Red cells (millions)	Hb.	Colour-index.	White cells.	Polymorphs.	Lymphocytes.	Monocytes.
	c.mm.	%		c.mm.	%	%	%
March 10	2·10	36	0·67	1000	—	—	—
,, 12	1·46	26	0·90	770	5·5*	91·5	3·0
,, 13	2·04	32	0·8	400	—	—	—
,, 14	2·15	43	1·0	1000	10	88	2
,, 15	2·97	54	0·9	500	—	—	—
,, 16	3·37	52	0·77	670	—	—	—
,, 17	2·80	52	0·93	720	—	—	—
,, 19	2·86	54	0·95	500	—	—	—
,, 20	2·60	50	0·96	600	8	90	2

* Platelets 20,000 c.mm.

Post-mortem examination revealed severe toxic visceral changes, basal pulmonary œdema and broncho-pneumonia. The liver showed conspicuous fatty degeneration. There was pallor and fatty infiltration of the marrow in the shaft of the right femur and a rib, and histologically these showed almost complete aplasia apart from a few very scattered leucocytes.

COMMENT

The two cases showed no qualitative alteration in the red cells other than a slight anisocytosis, as is usual in aplastic anæmia. Granulocytopenia was

prominent in both of them, and pentose nucleotide therapy was tried in the hope of stimulating the granulopoietic activity of the bone-marrow, but not the slightest response was obtained.

Evidence is increasing that dramatic success can be expected of pentose nucleotide therapy only in those cases of granulocytopenia attributable to a "maturation arrest" of the granulocytes of the bone-marrow.[3] In such cases much hyperplasia of the granulopoietic elements of the marrow is found, and this is in contrast to the hypoplasia or aplasia seen in aplastic anæmia. There is usually no associated anæmia, or only a very slight diminution in red cells.

If this supposition be correct the failure of pentose nucleotide in the above two cases was to be expected, for in both of them there was almost complete aplasia of the marrow. Failures in the treatment of granulocytopenia by pentose nucleotide have been recorded by Fairley and Scott,[4] Blackie,[5] Hall,[6] and Fettes and Whitby,[7] and it is probable that many of these cases were of the aplastic variety, not associated with hyperplastic changes in the marrow. In the two cases reported here the presence of severe anæmia in addition to the granulocytopenia made it necessary to give blood transfusions. It may be said that transfusion was too infrequent; but as often happens, the transfused blood was quickly destroyed and gave little benefit apart from a slight improvement in the red cell count of the second patient.

A larger number of cases is obviously necessary before any definite conclusions can be reached with regard to the use of pentose nucleotide in aplastic conditions of the bone-marrow; but in view of the uncertain ætiology of many of these conditions it seems to be worth a trial.

My thanks are due to Dr. T. W. Griffiths and Dr. G. Goodhart for their kind coöperation.

BIBLIOGRAPHY

1. Mills, E. S.: Canad. Med. Assoc. Jour., May, 1931, 628.
2. McCarthy, F. P., and Wilson, R.: Jour. Amer. Med. Assoc., 1932, xcix., 1557.
3. Lescher, F. G., and Hubble, D.: Quart. Jour. Med., 1932, i., 434.
4. Fairley, N. H., and Scott, H. H.: THE LANCET, 1933, ii., 75.
5. Blackie, W. K.: Ibid., 1934, ii., 335.
6. Hall, D.: Ibid., 1934, ii., 1441.
7. Fettes, J., and Whitby, L. E. H.: Ibid., 1935, i., 205.

APLASTIC ANÆMIA FOLLOWING NEOKHARSIVAN

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AMONG the untoward results of the treatment of syphilis by the organic arsenical preparations aplastic anæmia and the other blood dyscrasias seem to have received very little attention in this country. Nevertheless, although rare, they are well recognised, especially in America, where McCarthy and Wilson [1] in 1932 published an analysis of all the available recorded cases and added 2 from their own observation. Bickford and Tilghman [2] in 1933 recorded 2 non-fatal cases of purpura hæmorrhagica occurring during the treatment of congenital syphilis with neoarsphenamine, and Scarf [3] (1934) a case of aplastic anæmia with recovery also following neoarsphenamine. These conditions are rare and McCarthy and Wilson were able to collect only 79 cases in all. Cole and his co-workers [4] (1931) observed only 2 cases in a total of 338 complications arising in the treatment of 1212 patients over a ten-year period, Phelps [5] had 2 cases in 272,354 injections, and Combes [6] 1 in 4000 patients.

CLASSIFICATION AND CLINICAL FEATURES

The classification of these conditions of the blood has always presented difficulties, for they all appear to be due to greater or less depression of the bone-marrow, but it seems that this depression may affect the various formative functions in varying degree and the provisional classification suggested by Kennedy [7] is likely to prove as useful as any. The importance of being able to classify a case is that the prognosis and treatment vary in the different types.

The suggested groups are: (1) thrombocytopenic, (2) granulocytopenic and agranulocytic, and (3) aplastic. A few cases are atypical and defy exact classification. Of the 79 cases referred to above, 65 fell into one or other of the three groups in the following proportions:—

—	I. Thrombocytopenic.	I. (sub-group). Thrombocytopenic and granulocytopenic.	II. Granulocytopenic and agranulocytic.	III. Aplastic.
Cases ..	12	7	12	34
Died ..	0	1	4	28

(Seven cases were placed in Sub-group I. because they showed granulocytopenia; one case, where this was marked, proved fatal.)

In Group I. purpura and external hæmorrhage are constant symptoms and occur within a few days of the last injection. The patients have usually received a considerable dosage, the average number of injections in the above series being 23. Anæmia is seldom severe, reduction of platelets being the striking feature. In Group II., the agranulocytic group, fever and necrotic angina of the pharynx are the commonest signs; they tend to appear after relatively few injections and within a few days of an injection. There is only very slight lowering of the red cell count, the damage being apparently confined to the granulocytes and granulopoietic tissues. Group III., the aplastic, is the largest. In these cases all the hæmopoietic functions of the marrow are depressed. The early clinical manifestations are generally purpuric, bleeding from a mucous surface being very common. In a few cases, however, extreme pallor and weakness are the only signs. Aplastic anæmia appears as a rule only after a large number of injections, at an interval varying from two hours to over one month. A large proportion of the cases are fatal (in McCarthy and Wilson's series the death-rate was 83 per cent.) but the illness usually lasts a considerable time.

HISTORY OF A CASE

A. B., a motor-bus driver aged 29, was admitted to the Royal Infirmary, Glasgow, on May 18th, 1933, complaining of increasing weakness and pallor. He stated that during the past six weeks he had been easily tired, suffered from breathlessness on exertion, and had become extremely pale. It was ascertained that the *Spirochæta pallida* had been isolated from a small genital ulcer and that anti-syphilitic treatment had been instituted on Nov. 8th, 1932. The treatment consisted of 5·85 g. of Neokharsivan in 13 injections, 2·2 g. of bismuth metal, and Hutchinson's pill (dosage unspecified). On April 21st, 1933, four weeks after the last injection, he was found to be feverish and unwell and thereafter he became steadily weaker and paler

On admission to hospital, apart from extreme pallor and a soft systolic apical murmur, physical examination was negative; the Wassermann reaction was negative

there was no sign of purpura and no history of hæmorrhage. The blood count was as follows :—

Red cells	1,260,000	Polymorph	54%
White cells	2,600	Lymphocytes	43%
Hæmoglobin	20%	Eosinophils	1%
Colour-index	0·8		

There were no nucleated red cells, no reticulocytes, and in fact no evidences of marrow activity. Platelets were very scanty. Indirect van den Bergh reaction showed 0·25 unit of bilirubin.

The condition of the blood during the patient's stay in hospital is summarised in the accompanying Table.

Table showing Blood Count

Date in 1933.	Red cells in millions.	White cells.	Hæmoglobin.	Reticulocytes.	Transfusion.
			Per cent.	Per cent.	c.cm.
March 18	1·26	2600	20	0	—
May 24	0·84	2200	17	0	—
,, 28	1·09	1600	15	0	200
,, 29	1·12	1400	23	0	—
June 2	1·04	2800	17	0	—
,, 7	1·50	3800	15	0	200
,, 8	2·16	3200	25	0	—
,, 23	1·48	3200	20	0	240
,, 24	1·31	2000	20	0	—
July 6	1·20	3400	15	0	500
,, 7	1·70	2600	25	0	—
Aug. 11	1·13	1400	20	0	700
,, 12	2·08	2200	32	0	—
,, 28	1·66	3200	28	0	500
,, 30	1·96	2200	38	0	—
Sept. 12	2·98	4200	42	8	—
,, 25	4·01	7600	70	5	—

Improvement was very slow, but ultimately, on Sept. 25th, 1933, a blood count showed :—

Red cells	4,000,000	Polymorph	39%
White cells	7,600	Metamyelocytes	7%
Hb.	70%	Myelocytes	4%
		Lymphocytes	47%
		Large mono.	3%

The patient was dismissed on Oct. 10th, 1933, and has remained well so far as is known. In the early stages of the illness platelets were very scanty in the films but increased in number as the blood improved. In the course of treatment, in addition to blood by transfusion, Blaud's pill up to grs. 30 t.i.d., liq. arsenicalis up to m 5 t.i.d., Campolon, Hepatex, whole liver and thyroid extract were administered. It was interesting to note that the appearance of reticulocytes in considerable numbers coincided with the administration of thyroid extract. During the earlier stages of the illness there was no evidence of marrow activity and life was maintained mainly by blood transfusions; eventually, however, the bone-marrow apparently resumed its hæmopoietic activities and the blood improved. It is suggested therefore that the case is to be regarded as one of aplastic anæmia caused by the depressing effect of neokharsivan on the bone-marrow and that it belongs to Group III. of the suggested classification. The volume of the earlier blood transfusions was small owing to difficulty in obtaining suitable donors.

MECHANISM OF PRODUCTION

These various blood dyscrasias so far recorded have occurred most frequently after the administration of neoarsphenamine; but this is probably because the drug is used more extensively than any other; in fact many authorities [8] regard sulpharsphenamine as much more dangerous in this connexion. All the organic arsenical preparations commonly used in the treatment of syphilis contain the double benzene ring and as the aplastic anæmia following these drugs closely resembles that occurring in benzene poisoning, most observers are of the opinion that the anæmia is caused by the action of the benzene group. The development of agranulocytosis and thrombocytopenia is more difficult to explain; the former may perhaps be due to a selective depressant action of the drug on the granulopoietic tissues. McCarthy and Wilson suggest that thrombocytopenia may be anaphylactoid in nature; all their cases had many injections and they consider that a sensitivity to the arsphenamines may develop gradually, and that the platelets are destroyed in the peripheral circulation. Support is given to this view by the rapid regeneration of platelets after the injections are stopped and also by the fact that in a few cases symptoms recurred whenever treatment was recommenced.

Whatever the exact mechanism of production may be, it is apparent that the organic arsenical drugs used in the treatment of syphilis can act as powerful poisons to the bone-marrow and further that their toxic action may not become manifest until several weeks have elapsed after the cessation of treatment.

TREATMENT

In the thrombocytopenic group no special treatment is required beyond discontinuing injections, for almost all the patients recover spontaneously within a few days. Where agranulocytosis or marked granulocytopenia is a feature blood transfusion is said to be of doubtful value. There appears to be no record of treatment by drugs such as pentose nucleotide, but in view of their value in other cases of agranulocytosis they should certainly be given a trial. In the aplastic cases blood transfusion frequently repeated is the only remedy with any prospect of success. Prevention is better than cure, however, and purpuric symptoms or pallor appearing during the treatment of syphilis should be regarded with grave suspicion and lead to the arsenical drugs being stopped at once.

I am indebted to Prof. W. K. Hunter for permission to publish the notes of this case.

REFERENCES

1. McCarthy F, P., and Wilson, Robert, Jun.: Jour. Amer. Med. Assoc., 1932, xcix., 1557.
2. Bickford, J. V., and Tilghman, R. C.: Ibid., 1933, c., 1984.
3. Scarf, M.: Ibid., 1934, civ., 2159.
4. Cole, H. N., de Wolf, Henry, McCuskey, J. M., Miskjian, H. G., Williamson, G. S., Rauschkolb, J. R., Ruch, R. O., and Clark, Taliaferro: Ibid., 1931, xcvii., 897.
5. and 6. Cited by Scarf (ref. 3).
7. Cited by McCarthy and Wilson (ref. 1).
8. Council on Pharmacy and Chemistry: Jour. Amer. Med. Assoc., 1932, xcix., 1688.

The reader is referred to the admirable paper by McCarthy and Wilson for a full bibliography of the cases recorded up to 1932.

PURPURA HÆMORRHAGICA CAUSED BY GOLD AND ARSENICAL COMPOUNDS

WITH A REPORT OF TWO CASES

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THE idiosyncrasies shown to the compounds of gold and arsenic are very similar. Both drugs commonly affect the skin and digestive system; less often they attack the hæmopoietic system, causing a reduction in the number of platelets, prolongation of the bleeding-time, and hæmorrhages, particularly from the uterus and nose. Purpura hæmorrhagica and agranulocytosis are rarer sequels.

GOLD PURPURA

Weil [1] states that the first case of gold purpura was reported in 1919. Since then others have appeared at intervals, chiefly in France, and examination of accounts of 21 of the recorded cases shows that they can be divided into two main groups :

(A) Purpura unassociated with any strong hæmorrhagic tendency. These cases recover spontaneously on stopping the injections.[2 3]

(B) Hæmorrhagic purpura involving the whole body surface. In this type there is profuse bleeding from the mucous membranes and particularly the uterus.

The following is an account of a case of purpura precipitated by the small initial dose of a second course of aurotherapy.

CASE 1.—The patient, a woman of 21, was admitted to the Victoria Park Hospital in March 1931, under the care of Dr. F. G. Chandler, suffering from bilateral pulmonary tuberculosis. On April 9th an artificial pneumothorax was induced on the right side, and on June 10th Dr. Chandler divided an adhesion. In May and June weekly injections of 0·1, 0·1, 0·2, and 0·2 g. of Allochrysine, a total of 0·6 g. had been given. The course was not completed because of the febrile reaction ascribed to the operation. She was sent to a sanatorium.

In February, 1932, the right lung was well collapsed, but a small cavity was seen in the left upper zone. On readmission for a course of intravenous Crisalbine she was apyrexial, but the sputum contained tubercle bacilli. On March 3rd the first dose, 0·05 g. of crisalbine, was given, the only reaction being a rise in temperature from 97·2° to 98·6° F. the next day. She felt perfectly well for the next two days, and her temperature was 97·4°. On March 6th petechiæ and ecchymosis were noticed round the site of the injection and in the evening she had a profuse epistaxis.

On March 7th a fine purpuric rash appeared all over the trunk, arms, and legs; there were also petechiæ on the tongue, lips, and nasal mucosa. There was free bleeding from the gums and a large bullous hæmatoma in the buccal mucosa. The fundi were normal, the liver and spleen were not enlarged. The stools contained a large quantity of dark blood. The urine contained no blood or albumin. The temperature was 98·6°, and the pulse-rate 100. The catamenia had started on March 5th, although not expected until the 8th. The loss was profuse and lasted a fortnight instead of the usual four days.

The patient was given glucose 4 oz. daily, Liveroid ½ oz. three times a day, and minced liver ½ lb. daily by mouth; also six injections of 20 c.cm. horse serum together with 2 c.cm. hæmostatic serum intramuscularly at six-hourly intervals. On March 8th and 9th she had a profuse epistaxis but no fresh petechiæ. An injection of 3 c.cm. of 10 per cent. solution of calcium chloride was given intravenously. On March 10th there were many fresh petechiæ; temperature 99·4°, pulse-rate 104–120. On the 11th the vaginal loss was more profuse, and two further doses of hæmostatic serum and horse serum were given. In the evening her condition became much worse, and a transfusion of 500 c.cm. of citrated blood, Group II., with 50 c.cm. of 25 per cent. glucose was given, the donor being the patient's sister. From now on there were no fresh petechiæ the oral bleeding stopped, and the patient made slow improvement until her vaginal loss ceased, after which she improved rapidly. The blood counts are shown in Table I.

Outcome.—The tuberculosis advanced steadily and the patient died from this nine months later, there having been no recurrence of purpura.

ARSENOBENZOL PURPURA

Bamforth and Elkington[4] in 1931 reviewed 15 recorded cases of arsenobenzol (arsphenamine) purpura, the first of which appeared in 1917; they also reported 4 of their own. The second case is strikingly similar to the case of gold purpura described above.

The patient, a man aged 40, was admitted to the West London Hospital in March, 1931, under the care of Dr. J. Burnford. He had an aneurysm of the aorta and the axillary artery, and his Wassermann reaction was strongly positive. Potassium iodide grs. 30 daily was given by mouth and intramuscular injections of Sulfarsenol (sulpharsphenamine). A total of 4·3 g., given between Jan. 11th and March 28th, completed the course. Four hours after the final injection of 0·6 g. he noticed a rash on his arms and legs. Toxic symptoms had not been observed up to this time, though he later admitted that he had felt unwell after the last four injections.

On admission to hospital on March 30th the distribution and extent of the lesions was almost exactly the same as in the case of gold purpura. The extravasation of blood round the site of the last injection was very extensive. The patient was bleeding freely from bullous hæmatomata in the buccal mucosa. Neither the liver nor the spleen was palpable, the fundi were normal, and the urine contained a trace of arsenic but no albumin or blood. Intravenous glucose (50 c.cm. of 25 per cent. solution) was given on admission. Liver, Liveroid, Coagulin Ciba (2½ per cent. solution by mouth), and hæmostatic serum by injection had no apparent effect in arresting the hæmorrhage, and fresh purpura appeared until a blood transfusion was given, after which all bleeding ceased within a few hours and he made a rapid and uneventful recovery. The blood counts are seen in Table II.

Outcome.—In May, 1935, his private doctor, Dr. J. A. Butler, wrote: "The patient is tolerably well; the aneurysm has not apparently progressed and there has been no jaundice or symptom of injury to the liver.

TABLE I.—BLOOD COUNTS IN CASE 1

Date.	Red cells.	Hæmo-globin.	Colour-index.	White cells.	Poly-morphs.	Baso-phils.	Eosino-phils.	Lympho-cytes.	Mono-cytes.	Myelo-cytes.	Punctate baso-philia.	Nucleated red cells.	Platelets.
March 9th	4,900,000	65%	0·66	17,000	83%	0·5	..	13%	3%	0·5%	Marked.	None seen.	Only 3 or 4 seen.
,, 11th*	..	..	..	..	..	..	..	..	..	..	..	..	..
,, 22nd	3,800,000	62%	0·8	16,000	73%	1%	4%	13%	8%	1%	Present.	None seen.	Numerous in large clumps.

* Blood transfusion 500 c.cm. citrated blood Group II.

TABLE II.—BLOOD COUNTS IN CASE 2

Date.	Red cells.	Hæmo-globin.	Colour-index.	White cells.	Poly-morphs.	Eosino-phils.	Mono-cytes.	Lympho-cytes.	Myelo-cytes.	Reticulo-cytes.	Polychro-masia.	Nucleated red cells.	Platelets.
March 31st	3,000,000	42%	0·6	24,000	87%	1%	2%	10%	0	0	Slight.	None seen	None seen.
April 1st*	..	33%	..	20,160	91%	0	0	9%	5·7%	0	Slight.	—	None seen.
,, 2nd	2,000,000	30%	0·75	30,000	95%	0	0	3%	2%	3%	—	Occ.	Occ.
,, 4th	1,780,000	22%	0·64	16,000	80%	1%	..	7%	12%	..	Marked †	None seen	None seen.
,, 8th	2,000,000	25%	0·6	12,000	85%	1%	..	14%	..	..	Marked.	..	90,000
,, 24th	3,300,000	42%	0·65	8·600	78%	3%	5%	14%	..	4·8%	Slight.	..	126,000

* Blood transfusion 650 c.cm. Group III. † With punctate basophilia. Occ. = occasional.

GENERAL CONSIDERATIONS

In 11 of the 22 cases of gold purpura a previous course of aurotherapy had been given, and this is suggestive of sensitisation. The small precipitating dose in our case of gold purpura is in favour of this view, and it is clear that the initial doses of a repetition course should be given with caution.

Probably there is some idiosyncrasy or abnormal sensitivity to these drugs. Simple toxicity of the compounds is ruled out, for some patients will tolerate nearly a full course, whilst others will tolerate one course and evince symptoms early in a second. French authorities lay great stress on family and clinical histories showing evidence of idiosyncrasy or allergy and advise against giving these drugs where there is a history of—e.g., asthma or urticaria. There was no history of any of these abnormalities in either of the cases recorded here.

Purpura in tuberculous patients treated with gold has been attributed to tuberculous bacillæmia, but Weil [1] could find no report of bacilli having been cultured from the blood investigated from this point of view. It has also been suggested that the gold may liberate tuberculous toxins, but there is no evidence that the drug acts in this way.[5]

The way in which the hæmorrhagic state is produced remains doubtful. Apparently it is not due to the anticoagulative properties that these compounds have on blood in vitro; for in the pamphlet enclosed in the sulfarsenol carton, under the heading "blood transfusion," it is recommended that 0·06 g. of sulfarsenol should be added to each 100 c.cm. of whole blood, so as to dispense with sodium citrate and give the patient the advantage of a dose of arsenic. I am unable to find a record of purpura caused in this way. Gold compounds have the same property, for Tzanck [6] says that 0·1 g. of allochrysine will prevent coagulation in 100 g. of blood in vitro; but Weil,[1] using a rabbit, found that only Solganol A. was the only one which diminished coagulation in vivo.

Sex-incidence is about equal: of 19 cases of arsenobenzol purpura 9 were in women,[4] and of 22 cases of gold purpura 14 were in women. Age, again, seems to have no influence, for two patients were over seventy and another was eighteen; nor has the general condition of the patient, for purpura has developed in patients treated for a small lesion of lupus, whose general condition was good.[8]

Various prodromal symptoms may occur—e.g., general malaise, nausea, headache, diarrhœa, and itching. Of the 22 cases of gold purpura 12 had prodromal symptoms, of which itching was the commonest. The interval between the last injection and the appearance of purpura varies, but the onset is sudden. In the second case, recorded above, it was only four hours. In Case 1 it was forty-eight hours. There have been one or two cases in which the purpuric or the agranulocytic syndrome has arisen up to five months after the last injection of gold [9 10]; and although this may be accidental it has happened often enough to suggest that the sequel was due to the drug. In both the cases reported here the oral and nasal hæmorrhages were so severe that blood from this source obscured any intestinal hæmorrhage.

In neither case was there any hepatic enlargement or jaundice; both complained of the extreme weakness usually associated with the agranulocytic syndrome. Neither showed eosinophilia. Lacapère [11] says that an eosinophilia of more than 6 per cent. before or during treatment should indicate caution in the the use of gold, while Houghton [12] found an eosinophilia of over 20 per cent. in every case developing a gold rash. In 10 cases of gold purpura in which a blood count was recorded, the eosinophilia was not high, and in only 2 cases [7 13] was it over 4 per cent.—i.e., 6 per cent. and 13·5 per cent. Recently Loewy [14] has published 4 cases of purpura hæmorrhagica following the use of Sedormid; the eosinophils were 27·8 per cent. and 9·4 per cent. in the 2 cases where a blood count was recorded.

Eosinophilia does not seem to be a conspicuous feature of arsenobenzol purpura and none of Bamforth and Elkington's 4 cases showed it.

PROGNOSIS

There were 10 deaths among the 19 patients with arsenobenzol purpura [4] and 10 among the 22 with gold purpura; so far the prognosis in the two types is much the same. In both the cases I report there was complete recovery, although the history and general condition was similar to that of many fatal cases. The red cells are always reduced in number, it may be below 2,000,000, and the hæmoglobin percentage is not always correspondingly low in the early stages. The extreme anæmia is not entirely due to loss of blood, though some patients, especially women, lose large quantities. Actual red cell destruction, as well as aplasia, probably takes place, and consequently the presence of polychromasia, reticulated red cells, nucleated red cells—all of which indicate bone-marrow activity—are good prognostic signs. Platelets are always reduced in number and may be absent, but our cases show that this does not influence the prognosis. Both our patients showed a leucocytosis and the ratio of granular to non-granular cells was always high. Leucopenia, as evidence of aplasia of the bone-marrow, carries a grave prognosis, the gravity rising with the proportions of non-granular to granular cells. This, with the degree of leucopenia, is the most important factor in estimating the outcome of a given case, although death may occur from cerebral hæmorrhage.

PROPHYLAXIS

The only efficient safeguard is systematic platelet counts, but the tourniquet test applied at each visit has been found useful (Hinault and Braillon [7]).

TREATMENT

Treatment should be started forthwith. Although no fresh spots appear and the hæmorrhage is lessening, procrastination is dangerous, for there may be a sudden severe exacerbation progressing to collapse and death. Blood transfusion is the most satisfactory method of arresting the hæmorrhage, and a large transfusion of 500–600 c.cm. seems to be better than repeated small transfusions. Before transfusion in our cases, we tried, without apparent effect, various remedies such as serum and liver. On the other hand in Lavastine and Reyt's case [15] the hæmorrhage stopped after a blood transfusion, but the patient's general condition failed to improve until she was given liver. All other accessory treatment had proved futile.

In view of the possibility of gastric hæmorrhage the diet should be soft, easily digestable, and supplemented by minced liver, liver extracts, and fluids containing at least four ounces of glucose daily. The liver—especially as we do not know its exact part in blood formation—should be protected, if possible, and it is therefore well to give 40 or 50 c.cm. of 25 per cent. glucose with the blood transfusion. Frequent injections should be avoided; they may lead to further hæmorrhage at the site of puncture. If there is evidence of agranulocytosis it is worth while

giving sodium nucleinate or pentose nucleotide.[16] In Coste and Cahen's [12] agranulocytic case sodium nucleinate 0·5 c.cm. every other day produced a rapid response with ultimate recovery.

SUMMARY

Two cases of hæmorrhagic thrombocytopenic purpura are reported, the causative agents being gold and arsenical compounds. Other recorded cases are reviewed, but no definite reason for this complication is found, though an idiosyncrasy or abnormal sensitivity of the patient is the probable cause. The eosinophilic response present in other complications of gold therapy is less obvious in the purpuric cases; in only 2 recorded cases was it above 4 per cent. No effective prophylactic measures are known, but a history of allergic or other abnormal responses should engender caution. Blood transfusion is the most effective means of treatment; liver extracts may be given to aid blood regeneration. The white cell count is the most reliable guide to prognosis.

My thanks are due to Dr. J. Burnford and Dr. F. G. Chandler for permission to publish the two cases, and to the laboratory staff of the West London Hospital and the Victoria Park Hospital for their help.

REFERENCES

1. Weil, P. E., and Bousser, J.: Sang., 1932, vi., 800, 825.
2. Griveaud, E.: Bull. Soc. franç. de derm. et syph., 1932, xxxix., 822.
3. Nicolas, Lebeuf, and Charpy: Ibid., 1932, xxxix., 328.
4. Bamforth, J., and Elkington, J. St. G.: Quart. Jour. Med., 1931, xxiv., 381.
5. Wells, H. G., and Long, E. R.: Chemistry of Tuberculosis, London, 1932, p. 431.
6. Tzanck, A.: Sang., 1932, vi., 897.
7. Hinault and Braillon: Rev. de la Tuberc., 1933, i., 406.
8. Vigne, P.: Bull. Soc. franç. derm. et syph., 1932, xxxix., 861.
9. Gougerot, H., and Burnier: Ibid., 1929, xxxvi., 64.
10. Angeras and Ginsbourg: Sang., 1932, vi., 798.
11. Lacapère, J.: Ibid., 1932, vi., 221.
12. Houghton, L. E.: Tubercle, 1932, xiii., 385.
13. Achard, C., Coste, F., and Cahen, R.: Bull. et mém. Soc. méd. hôp. de Paris, 1932, xlviii., 547.
14. Loewy, F. E.: THE LANCET, 1934, i., 845.
15. Laignel-Lavastine and Reyt: Sang., 1932, vi., 452.
16. Doan, C. A.: Jour. Amer. Med. Assoc., 1932, xcix., 194.

Other references consulted are those of R. Amat (1930), Driver and Weller (1931), Meulinier et al. (1933), and Fortunato (1933).

BIOLOGICAL ACTIVITY OF DERIVATIVES OF THE MALE HORMONE ANDROSTERONE

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AND

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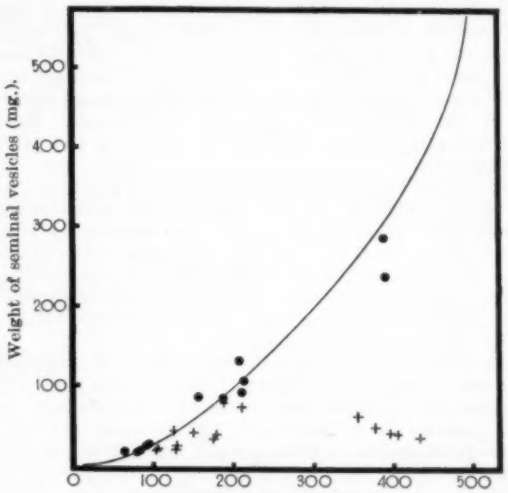
IT has already been shown [1] that solutions of the crystalline male hormone androsterone injected into rats will maintain normal prostate and seminal vesicles after adult castration and will produce growth of the rudimentary glands in animals castrated before puberty. Androsterone, therefore, in sufficient doses will replace the secretion of the testis, but for two reasons it was concluded that this substance is not the actual testis hormone:—

(1) It is less effective in producing growth of the seminal vesicles than of the prostate. This was seen most clearly after 28 days' injection, when the prostate was large whereas the seminal vesicles had only grown slightly (see Table and Figure).

(2) A given number of capon units of androsterone were much less active on the accessory glands of castrated rats than the same number of capon units of a particular urine concentrate.

In view of these facts it seemed desirable to test two derivatives of androsterone which by analogy with the œstrus-producing hormone might be expected to be more effective on rats: (*a*) the reduction product of androsterone, the so-called dihydroandrosterone,[2 3 4]



The curve shows the relation between prostate size and seminal vesicle size in normal rats. The points show the relations between these glands in pre-puberally castrated rats receiving the largest doses of androsterone (+) and andradiol (●) used in this work.

preferably called andradiol, and (*b*) the benzoate of androsterone.

Andradiol is reported [2 3 4] to be about three times as active on the capon comb as androsterone. In agreement with this, a test in this laboratory gave a unit of 33 gamma for andradiol as compared with 100 gamma for androsterone. The Table shows the results of four experiments carried out on pre-puberally castrated rats with andradiol, and also those of five similar experiments with androsterone and one with androsterone benzoate. All details of technique are given in the previous paper.[1] It is clear from these experiments that andradiol, unlike androsterone in the dosage used, produces normal growth of the accessory glands of the pre-puberally castrated rat; the seminal vesicles grow pari passu with the prostate, and there is a normal relation between the size of the two glands (see Figure).

Table showing Average Weights after Fixation of Prostate and Seminal Vesicles in Control and Injected Rats Castrated before Puberty

No. of rats.	Daily dose mg.	Days injected.	Total capon units.	Average weight (mg.) of—	
				Prostate.	Seminal vesicles.
16	Controls.	—	—	16	4
6	0·6 androsterone in oil.	10	60	64	14
5	1·0 " "	10	100	112	32
5	2·0 " "	10	200	129	26
5	2·0 androsterone in alcohol.	10	200	170	56
5	1·0 androsterone in oil.	28	280	394	46
5	0·25 andradiol in oil.	10	75	63	22
5	0·5 " "	10	150	82	22
5	1·0 " "	10	300	199	101
2	1·0 " "	20	600	389	253
5	0·5 androsterone benzoate in oil.	10	—	17	5

In this respect, therefore, andradiol appears to resemble the testis hormone; but nevertheless it must be placed in the same category as androsterone owing to its low activity per capon unit on rats compared with that of the urine concentrate "Enarmon." Actually it would appear from the Table that andradiol is less active per capon unit on the rat prostate than androsterone, though rather more active per milligramme of the pure substance. On the seminal vesicles, however, after the initial lag in their growth has been passed, andradiol is much more active both per capon unit and per milligramme than androsterone, though still not as active as the urine preparation.

It follows that the high activity of "Enarmon," or of testis extracts, is not due to the presence of andradiol. This agrees with the report by the Amsterdam workers [5] of the isolation from testis of a substance, of as yet uninvestigated constitution, which is ten times as active as androsterone in capons, and which, when combined with a tissue extract, is said to be very active on rats.

Androsterone beznoate.—In the first test, carried out on a group of 5 capons, it was found that 272 gamma of androsterone benzoate (equivalent to 200 gamma of androsterone) given daily for five days produced negligible growth of the comb one day after the last injection. In a further test, carried out on a single capon 1·36 mg. daily (equivalent to 1 mg. of androsterone) for five days produced 5 mm. increase in length and height one day after the last injection—i.e., an effect similar to that produced by 100 gamma of androsterone. Comb growth was continued however for some time after the end of injection. The rat test on the benzoate gave completely negative results (see Table).

The increased activity of œstrone benzoate is probably due to its hydrolysis by the organism at an optimal rate. The inactivity of androsterone benzoate would indicate, however, that it is hydrolysed very slowly. Such a difference between the rates of hydrolysis of œstrone and androsterone benzoates may be correlated with the fact that the former is the ester of a phenol, whilst the latter is the ester of an alicyclic secondary alcohol. Further work is to be carried out on this subject. Analogous differences in rates of enzymic hydrolysis of phosphoric esters are known.[6]

We are much indebted to Prof. Ruzicka and to Messrs. Ciba for the supply of andradiol.

REFERENCES

1. Callow, R. K., and Deanesly, R.: Biochem. Jour., 1935, xxix., 1424.
2. Tscherning, K., quoted by Butenandt, A., and Schmidt, J.: Ber. Deut. chem. Ges., 1934, B, lxvii., 2092.
3. Ruzicka, L., Goldberg, M. W., and Meyer, J.: Helv. chim. Acta, 1935, xviii., 210.
4. David, K., and Freud, J.: Acta brev. neerl. Physiol., 1935, v., 31.
5. David, K., Dingemanse, E., Freud, J., and Laqueur, E.: Hoppe-Seyl. Z., 1935, ccxxxiii., 281.
6. Hotta, R.: Jour. Biochem., Tokyo, 1935, xx., 343.

CLINICAL AND LABORATORY NOTES

A METHOD OF BLEEDING TRANSFUSION DONORS

By H. L. Marriott, M.D., M.R.C.P. Lond.

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Anyone with much experience in bleeding transfusion donors knows that it is sometimes hard to obtain several hundred cubic centimetres of blood. The method about to be described has been the standard one at the Middlesex Hospital for a year, and has rendered blood collection much easier. We have particularly found it of service in connexion with our method of continuous drip transfusion described in The Lancet of April 27th.

Difficulty in obtaining blood by needle methods arises, as a rule, either from failure to insert or maintain the needle in the lumen of the vein, or from formation of a clot within the needle. Given a sharp needle, reasonable veins, and average skill on the part of the operator, the trouble is usually from clotting in the needle. The flow begins briskly, but soon diminishes and finally stops. Our method aims at removing this difficulty by accelerating the flow of blood so that it has no time to clot. The acceleration is secured by aspirating the blood by a *strong* pump.

Aspiration is not a new principle, but the pumps employed have generally been weak, such as rubber bulbs of the Higginson pattern or Potain-type pumps. We employ a Dunlop "Junior" motor-car tyre foot-pump (price 18*s.* 6*d.*) with its valve reversed so that it sucks instead of blows. This pump easily provides a negative pressure of 12 inches of mercury. It has also the advantage of being foot-operated. The difference in the rate of flow made by strong suction has to be seen to be believed. It is usual to complete the collection of 500 or 600 c.cm. of blood within five minutes; a flow of less than 50 c.cm. per minute indicates that the needle is not truly in the vein. If the needle is properly inserted, the strong stream does not falter, and there is a temptation to remove too much blood because of the ease of the method.

The safe limit for blood removal by any method is 50 c.cm. per stone, or 8 c.cm. per kg. of body-weight for healthy donors. In our experience of hundreds of cases rapid removal causes considerably fewer reactions than slow, because, provided the above limit is observed, any reaction that occurs in withdrawing blood is psychological and not due to blood loss. The psychological factor is proportional to the time taken. It is increased by prolonged manipulation, suggesting to the donor that the operator is in difficulties. Many experienced donors have commented favourably on the method from their point of view. The limit of 50 c.cm. per stone has a fair margin of safety, but it should be exceeded only in rare instances when the need for blood is very great and the donor is a relative of the patient. Never should it be exceeded when using the public-spirited, voluntary donors of the British Red Cross Society's transfusion service.

The simple apparatus used is shown in the illustraton.

The blood is collected in an ordinary quart milk bottle which has the advantages, as compared with special flasks, of being cheaper, stronger, and more easily replaced. The bottle is graduated in c.cm. for a few pence. The bung is of rubber. We use a Keynes's needle. All the rubber tubing is pressure tubing, for thin-walled tubing collapses under suction. The tubing between the bottle and the pump includes three sterile cotton-wool filters whose function is to prevent infection of the blood by

the slight blow-back which occurs at the beginning of each stroke of the pump.

The donor should lie recumbent with one pillow. The operator, before scrubbing up, applies a sphygmomanometer cuff to the donor's arm, and blows it up to 70 mm. Hg. He also swabs the elbow flexure with spirit, and connects up the tubing to the pump, taking care to touch only the pump end of it. After he has scrubbed

The apparatus used. The relative differences in projection of the glass tubes through the bung into the bottle are important and must be as shown.

up, he dons a sterile gown and sterile gloves and isolates the area of the vein with sterile towels.

The Keynes's needle is inserted into sterile 3·8 per cent. sodium citrate solution, two or three pumps given, and 100 c.cm. sucked into the bottle. A Spencer Wells forceps is then clipped on the tubing between the bottle and the glass connexion, and a good partial vacuum developed in the bottle by half a minute of vigorous pumping. Next, a wheal is raised over the vein by intradermal injection of a few drops of 1 per cent. novocain. The Keynes's needle is thrust through the wheal into the vein, and the Spencer Wells removed. Blood shoots through the glass connexion, and a moment later enters the bottle. If this does not happen, the vein has been missed or over-penetrated, and the needle must be manipulated, without withdrawal, till blood is seen in the glass connexion. Once the needle is in the vein, it is advisable gently to push it up the vein to its hilt so that a slight subsequent movement of the operator's hand may not cause the mishap of the needle slipping out of the vein.

The blood flows in a steady stream, and it is only necessary to give an occasional few pumps as collection proceeds. The donor should strongly clench and unclench his fist upon a roll of bandage about a dozen times a minute throughout the removal of the blood. If the flow stops for a moment, the needle should be given a slight twist to release the vein wall which has become sucked against the hole in the needle. The operator should control the needle with one hand, and hold the bottle with the other so that it is below the level of the couch and out of sight of the donor. He should keep shaking the bottle to mix the blood and citrate solution.

When sufficient blood has been removed, the sphygmomanometer cuff is deflated, and the needle withdrawn. A swab is applied to the puncture, and the donor instructed to flex fully his elbow. The tubing on either side of the bung is disconnected. The top of the bottle is tied up in a sterile towel if the blood is not immediately wanted.

The closed nature of the method makes it more aseptic than the common practice of catching blood in an open jug; it also eliminates mess. The needle and tubing should be washed at once before clot forms. The donor should remain lying down for half an hour by the clock, and should drink two large cups of tea to replace the fluid lost.

GOLD SALTS IN THE TREATMENT OF ASTHMA

By L. Banszky, M.D. Berlin, L.M.S.S.A. Lond.

LATE ASSISTANT TO THE CLINIC FOR ALLERGIC DISEASES, LEIDEN, HOLLAND

The use of gold preparations for asthma was first suggested in 1930 by Dudan,[1] who found that cases of asthma with radiological evidence of previous tuberculous lesions in the lungs were greatly benefited by intravenous injections of Sanocrysin. He reported disappearance of all symptoms and return to normal in some 70 per cent. of the patients treated in this way.

The beneficial effects of the remedy can be explained on grounds other than Dudan's theory that the asthma was due to a non-active form of tuberculosis. In all diseases successfully treated with gold salts (whether tuberculosis, arthritis, actinomycosis, or asthma), the first response is an increase of body-weight, with a very definite feeling of well-being, and improved sleep and appetite. This general tonic effect would partly be sufficient to account for the improvement in cases of asthma, but there are certain facts pointing to a specific tonic effect on the vegetative nervous system. This effect I am at present investigating, but the object of the present note is simply to record the results obtained in the treatment of 20 cases.

Preparations used.—The gold preparation used was Crisalbine, which was given intravenously at weekly intervals. Reactions were prevented by increasing the dose only when the previous strength had been well tolerated by the patient. The first was 5 mg. (0·005 g.) and the highest usually 0·05 g. (in two cases 0·09 g.). Altogether approximately 0·5–0·6 g. of gold was given, distributed over 20–25 injections.

Complications.—According to Anson[2] doses up to 0·1 g. hardly ever prove poisonous, and in nearly 80 per cent. of the cases treated by him all toxic phenomena occurred with doses above 0·45 g. This agrees with my own experience that the toxic effects of gold salts in this strength are negligible. Anson's figures apply to sanocrysin used in tuberculosis, but the advantage of small doses of gold applies even more to asthmatics, who are usually much less tolerant of intravenous injections than other patients. The urine was examined before each injection and I was never able to find any albumin in it. Slight dermatitis developed in 3 cases, but it disappeared within four weeks of discontinuation of the treatment, without administration of any of the drugs usually given, and the treatment could be continued.

Results.—Of the 20 cases treated with crisalbine 10 became wholly free from asthma, with return to normal condition, and remained free from symptoms more than a year after completion of treatment.

[1] Dudan, A.: Schweiz. med. Woch., 1932, lxii., 96.
[2] Anson, C. E. H.: Tubercle, June, 1934, p. 385.

Of the other 10, 5 became free from asthma after the first course, but had a relapse after five or six months; 3 of them got well after a second course, though it is too soon to say whether the improvement has been permanent, but 2 did not respond to the second course. Out of the remaining 5 patients, 1 who had very severe asthma showed only partial improvement, 1 did not respond at all, and 3 had attacks of asthma as a result of each injection, so that the treatment had to be discontinued. In 8 cases out of the 20 great improvement was observed after the first injection (0·005 g. crisalbine); in other cases the improvement did not set in until after the third, sixth, or tenth injections. One patient developed asthma after 0·04 g. of crisalbine, another after 0·06 g., and another after 0·07 g. In these cases the attacks were only slight and subsided after a day or two.

My experience suggests that minute doses of gold salts are a harmless and valuable addition to the group of non-specific drugs (sulphur, iodine, tuberculin, &c.) in the treatment of asthma and deserve to rank first among such remedies.

London.

MEDICAL SOCIETIES

SOCIETY OF MEDICAL OFFICERS OF HEALTH

FEVER HOSPITAL MEDICAL SERVICES GROUP

A MEETING of this group was held on June 28th, Dr. H. S. BANKS, the president, being in the chair.

Dr. G. RONALDSON communicated observations on

The Pathogenesis of Diphtherial Paralysis

He said that the pathogenesis of diphtherial paralysis was a subject on which there was no consensus of opinion. Exponents of a central conception maintained that many points in the symptomatology admitted of no other explanation than an affection of the central nervous system, while supporters of the peripheral hypothesis were equally convinced that the paretic manifestations were the result of toxic action on the peripheral nerves. There were variants of both theories, but whether a central or peripheral view was favoured, the fact that analogous features existed between diphtheria and tetanus would be generally admitted. A brief reference to the pathology of tetanus was helpful in comprehending a view held by many leading French clinicians, viz., that diphtherial paralysis was of the nature of an ascending neuritis. In the ascending form of tetanus, the toxin was supposed to travel along the nerves from the infective focus to the central nervous system, and the first manifestations appeared in the immediate neighbourhood of the wound. The French theory of the pathogeny of diphtherial paralysis was essentially similar; it was initially an ascending nerve transport process with local symptoms of central origin. A theory which was more familiar to English readers was that of F. M. R. Walshe, who sought to adapt the Meyer and Ransom tetanus classification (local, specific, and general) to the nervous phenomena of diphtheria. The local form was exemplified by paresis of the palate in faucial cases, and this was alleged to be the result of toxin ascending from the fauces to the central nervous system by the perineural lymphatics. The specific form (oculomotor palsy) was central in origin and the generalised (polyneuritis) "sometimes central and sometimes peripheral," but the toxin in these latter types was said to be carried by the blood. Dr. Ronaldson then summarised the chief arguments in favour of nerve transport hypotheses in general. Certain recorded instances of accidental injection of diphtheria toxin had thrown some light on these questions and a number of these happenings were referred to as series A, series B, series C, and series D, which had occurred in certain foreign countries. The paretic sequelæ were almost identical with those of natural diphtheria—e.g., in series A, paresis of accommodation 3rd week; palatal paresis 3rd–4th week; peripheral neuritis 6th–9th week. As these were virtually examples of artificially produced paresis in the human subject and there could be no question of a coexisting faucial lesion, the occurrence of palatal paresis definitely refuted the argument previously mentioned. In the words of the observer of the series C cases, "extensive observations on several hundreds of cases have revealed to us paralysis of the palate and pharynx with the same frequency following injection into a point however far from the pharynx." In some cases an injection in the gluteal region had occasioned an acute neuritis with positive Lasègue's sign and paresis of the muscles supplied by the peroneal branch of the sciatic. This "local" condition was quite different from the paresis of natural diphtheria and its counterpart must be sought in the results of animal experiment where injections into the sciatic nerve had produced a comparable lesion. Dr. Ronaldson then described with comments the diphtheria toxin experiments of H. Meyer, Babboneix, and others. His conclusion was that the results of such experiments could not be dissociated from an inflammatory element which was absent in the naturally occurring disease, and the ascending process which was often referred to as characteristic had not been satisfactorily demonstrated. The work of Defrise, Jossifow, and other anatomists had disposed of the contention that the perineural lymphatics acted as pathways for toxin carriage; they had traced these lymphatics to the neighbouring lymph glands. The important tetanus researches of Abel and his associates had told us that when properly graded doses were employed, the length of the latent period was the same in large or small animals. The local sensory loss which was an occasional sequel of the Schick test had demonstrated the possibility of local action with a "time lost" factor entirely independent of any nerve travel. The nerve transport theory remained unproved and the arguments adduced in its support had no validity. The speaker then gave his reasons for asserting that a purely peripheral conception was not altogether in accordance with the known facts, though he contrasted the very constant evidence of peripheral nerve changes with the meagre and inconstant findings in the central nervous system. Extended histopathological investigations of the central nervous system in diphtheria should be carried out with the employment of modern technique; negative findings in a small series of cases did not prove the correctness of any conception. Such unusual symptoms as trismus, athetosis, convulsions, and transient hemiplegia were seen in the series B cases, and Dr. Ronaldson had published similar examples in cases of natural diphtheria. These rare phenomena were of no great clinical significance, but they showed the possibility of hæmatogenous involvement of the central nervous system, and their occurrence proved that the "blood-brain-barrier" was not absolutely

impermeable to diphtheria toxin. The case for hæmatogenous central involvement was really dependent on clinical inferences and a number of suggestive clinical observations were mentioned. Various types of impairment of the palate were described. The only truly local form of diphtheritic paralysis was the precocious variety, and its pathological basis was probably a myositis which was the result of toxic saturation. What had been called the local sign or factor was quite different and the simple and most satisfactory explanation was a process of toxic diffusion. All confusion would be obviated if this type were referred to as "regional."

Dr. F. M. R. WALSHE confined his remarks to his own clinical observations. During the war chance had given him the opportunity of seeing some 100 cases of diphtheritic paralysis following faucial diphtheria, and some 60 cases following extrafaucial diphtheria (cutaneous and wound infections.)

Of the faucial cases over 90 per cent. of those showing nervous manifestations had palatal paralysis as an early sign. Of the extrafaucial cases, none showed palatal palsy, but a third had an early palsy related anatomically to the seat of the infective focus. In addition to these there were two cases with infected cutaneous lesions in whom there had been palatal palsy in the absence of any history of sore-throat. But both of these had come under observation several weeks after the onset of their symptoms, and the absence of positive throat findings at this juncture did not exclude its probable early presence. Similarly, the absence of a history of sore-throat was not conclusive, because all were familiar with typical cases of post-diphtheritic paralysis in patients who gave no history of sore-throat. He had seen such cases himself. Therefore, it appeared to him that the only reasonable interpretation of these 160 observations was that the initial palsy in diphtheritic paralysis was of the nature of an ascending neural intoxication from the site of the infective focus. It was impossible to disregard the mass of evidence in favour of this view. The later developing multiple neuritis was probably a blood-borne intoxication and was manifestly the result of a peripheral lesion, whereas the initial local palsy was almost certainly central in origin. A study of the literature of extrafaucial diphtheria from the point of view of its nervous complications was disappointing, because the clinical descriptions were usually grossly inadequate, but even so the literature contained numerous case records which supported the view he had put forward, and—as far as natural diphtheria was concerned—no cogent evidence against it. In any case, any assessment of the nature of diphtheritic paralysis required as a background a working knowledge of other intoxications and diseases of the nervous system, and this was rarely forthcoming from those who wrote upon the subject.

Dr. M. MITMAN maintained that diphtheritic paralyses depended upon lesions of the central nervous system. He believed that the rapidity of onset and the extent of paralyses vary with the extent of the oropharyngeal membrane. The fixation of toxin to nervous tissue occurred early in the disease, and once fixed, antitoxin was incapable of affecting it. The latent period before the onset of paralyses was occupied by the time taken for transportation along nerves and affection of cranial nuclei. Those nuclei nearest the site of entry of toxin into the central nervous system were the earliest and most frequently and severely affected. The common sequence of paralyses—what he called "the march of paralyses"—depended upon the time taken for toxin to travel inside the central nervous system from one nucleus to another. Once the toxin was disseminated any nuclei might be affected, although the toxin appeared to exert some selective affinity. All the paralyses could be explained on this hypothesis. The so-called late cardiac failure he also attributed to a central (bulbar) involvement. In support of this view he drew analogies with other diseases of the central nervous system: tetanus, acute poliomyelitis, and lead palsy, and brought forward several clinical, pathological, and experimental arguments in its favour. He mentioned a case of severe diphtheria in which diaphragmatic paralysis was followed by paralysis of the upper intercostals and then of the lower. This suggested to him a progression of the process downwards in the cervical cord. He had seen unilateral paralysis of the palate, eye, or other structures appearing on the side of the original faucial membrane. He held that this was the rule and depended upon a nerve transportation of toxin to one side of the central nervous system. If the faucial affection was bilateral, the unilateral paralysis would appear on the side which had had the more extensive membrane. Sometimes paralysis occurred on one side before the similar structure on the other side was affected. The side of the earlier paralysis was the side of the more extensive membrane. If these findings were accurate they could only be explained by a central nervous lesion.

NEW INVENTIONS

A MODIFIED SIEGEL'S SPECULUM

THE features of the speculum shown in the accompanying figure are:—

1. *An opening in the upper part to facilitate rarefaction of air inside the ear.*—The procedure is as follows. The speculum having been placed in the ear, the rubber bulb attached to the speculum is pressed with the right hand and completely emptied of air, the latter escaping through the opening. The opening is next closed with the index-finger of the left hand, the bulb is released and the air thus drawn from the ear into the bulb; during this process discharge is coaxed from the middle ear into the meatus. A very powerful suction is obtained in this way; "sticky discharge" of Eustachian or attic origin is easily drawn into the meatus. I found this speculum particularly useful when preparing the ear for ionisation. With Siegel's speculum I only succeeded in moving the discharge to and fro without being able to detach it from the compartments of the middle ear.

2. *A magnifying lens.*—A revolving magnifying lens is incorporated in this speculum. To bring it into action the top part is removed and the lens revolved into the line of vision; the lens enables the surgeon to remove impacted wax or polypi, or to cauterise granulations with great facility.

The speculum was made for me by Messrs. Mayer and Phelps, of New Cavendish-street, W.1.

London, W. ARTHUR MILLER, F.R.C.S.

REVIEWS AND NOTICES OF BOOKS

Entstehung und Funktion von Gefässsystem und Blut auf Cellular-Physiologischer Grundlage

By Dr. Med. MAX HAUSMANN, St. Gallen. Basel: Benno Schwabe and Co. 1934. Pp. 704. Rm. 44.80.

THE genesis of the circulatory system and of the blood is here traced back to rudimentary beginnings in invertebrate forms. The problems involved are discussed at length from both morphological and physiological aspects. The work is divided into three main parts: in the first the author examines the morphology and histology of the cœlomic system in all the principal invertebrate types; in the second the development of the vascular system in primitive vertebrates is described, while the third gives a remarkably complete account of the physiological aspects of the circulatory system in the higher vertebrates.

It is difficult to give an adequate impression of so comprehensive a work: the canvas is vast and full of detail. Dr. Hausmann takes the view that the vascular endothelium of the vertebrates is derived phylogenetically from the cœlomic elements of more primitive forms. Following Lang's trophocœle theory he finds that the cœlom is productive of endotropic and exotropic formations. The latter leads to the appearance in the animal kingdom of the so-called hæmocœle and hæmocytes which evolve later into the vascular system and its various components. The blood-cells spring in part from the primitive mesenchymal cells and in part from the vessel wall itself by proliferation. It is interesting to find that the author regards the reticulo-endothelial system as essentially primitive. According to him the phagocytosis and storage of dyes is a feature of primitive cell forms, and is seen in the relatively undifferentiated mesenchyme of the humbler invertebrates. In higher forms the elaboration of different types of connective tissue has tended to suggest falsely that the reticulo-endothelial system is a specialised product. Numerous other sidelights are thrown upon current medical teaching: an instance may be given in the interesting analogy traced between the land vertebrate's hypophysis and the sub-neural gland of fishes. The latter is directly exposed to currents of sea water and acts as a sort of sense organ, regulating the animal's water metabolism. It may be more than a coincidence that the hypophysis of higher forms, and related structures in the floor of the third ventricle play an important part in the control of the water balance of the body.

The book will principally appeal to the zoologists and biologists as a noteworthy study in comparative morphology and physiology. But it will also attract those whose chief interests are elsewhere but who maintain a philosophical interest in the animal kingdom. The book is well produced and lavishly illustrated; it deserves a better binding.

Traité de gastroscopie

et de Pathologie Endoscopique de l'Estomac. By FRANÇOIS MOUTIER, Chef de Laboratoire de la Faculté de Médecine. Paris: Masson et Cie. 1935. Pp. 347. Fr. 120.

THE subject of gastroscopy was brought prominently to the notice of many members of our profession during the discussion at the Royal Society of Medicine this winter, when Prof. Arafa, of Egypt, gave a demonstration and lauded the value of this method. Those requiring complete technical details concerning the use of the gastroscope will therefore welcome this book by Dr. Moutier.

In his introduction to the work Prof. P. Duval writes: "Gastroscopy should now be one of the ordinary clinical methods of examining the stomach. It occupies a similar place to radiology; it is neither superior nor inferior in value to this, it is the indispensable complement." It is essentially in helping us to determine the presence of gastritis and to estimate its real importance that gastroscopy promises to be of value; this volume, which is abundantly illustrated with coloured plates, should prove extremely useful to those wishing to pay closer attention to the lining of the stomach. Whether the enthusiasm for gastroscopy of its author and of his medical and surgical colleagues at the Vaugirard Hospital in Paris is fully justified time alone will show. For the moment it suffices to say that this treatise is the most up-to-date work available on this subject.

A Brief Outline of Modern Treatment of Fractures

By H. WALDO SPIERS, A.B., M.D., Professor of Orthopædic and Fracture Surgery, College of Medical Evangelists, Los Angeles, California. London: Baillière, Tindall and Cox. 1935. Pp. 129. 9*s*.

THE aim of this small text-book is to subtract from the rather confusing welter of methods and apparatus described by various surgeons those that are of proven value; to introduce these to the student in a clear and simple manner, so as to avoid burdening his mind with unnecessary detail; and to leave in his mind a knowledge of the fundamental principles involved in treating fractures. To a large extent these aims have been realised; but the result has not been to produce a particularly elegant or pleasing text-book. Too much can be sacrificed to brevity, and it is doubtful whether the descriptions of treatment are sufficiently detailed to be of much value to the casualty officer or to the young practitioner in his first attempts at fracture treatment. As a text-book for the examinee who requires a rapid general survey of the subject, the book has more to recommend it. The outline drawings are definite and clear, but they are, on the whole, poorly drawn; moreover the style of presentation, notably the construction of paragraphs in a series of choppy sentences, calls for improvement. Little fault will be found with the particular methods recommended in individual fractures; those chosen are, on the whole, the most generally popular. The explanation, if such it can be termed, of the occurrence of "neurotic spine" is curious. It is said that it "probably goes back to the subconscious fear which in tribal days the individual had, due to the severe penalty which usually accompanied a disabling injury of the back. A member of the tribe whose back was disabled was known to be an economic liability in those days and in all probability his life was routinely sacrificed." An ingenious suggestion but hardly convincing.

THE LANCET

LONDON: SATURDAY, JULY 13, 1935

THE ADVERTISEMENT OF SECRET REMEDIES

THE exploitation of sick persons by preying upon their ignorance, their credulity, and their morbid hopes and fears is a social evil which no one can defend. It is a cruel fraud to offer secret remedies claiming to cure diseases like cancer or tuberculosis which, so far as is known, are incurable by drug therapy. As reported in another column, the Minister of Health gave a sympathetic answer last week to a request for legislation to control the advertisement of medicines and surgical appliances. He had been interviewed by a deputation representing not merely the medical and pharmaceutical professions but also the advertising business and the newspapers as well as local authorities and other bodies with wide interests. The deputation was able to tell the Minister that a draft Bill had been prepared with a degree of agreement never previously attained. Its limited objectives were twofold—first the prohibition of advertisements of medicines, appliances, or treatments claiming to cure or prevent certain scheduled diseases, and, secondly, the prohibition of invitations to the public to obtain diagnosis or treatment of those diseases by correspondence. The specified diseases are those which are either incurable or are obviously unsuitable for unskilled treatment, and those sexual ailments which notoriously give a sinister opportunity to the impostor and the blackmailer. The Minister agreed that legislation was needed, but he naturally added the inevitable reservations about the existing commitments of the Government's programme which must be expected from responsible members of the Cabinet. We would venture nevertheless to beg the Minister to remind his colleagues, whatever their political preoccupations, that the existence of this public scandal is no new discovery. It is now over twenty years since a Select Committee of the House of Commons was appointed to inquire into the sale of proprietary remedies. The resultant report (reprinted as a special supplement to THE LANCET of Jan. 10th, 1925) was as damning a document as could be. Even if the evidence whereon its conclusions were founded belongs to the pre-war period, those conclusions might equally be reached after inquiry to-day. While the Select Committee found that patent and proprietary medicines were in some cases genuine scientific preparations or unobjectionable specifics for simple ailments, it declared that many secret remedies made grossly exaggerated claims, caused injury by delaying recourse to proper medical treatment, contained large quantities of alcohol in disguise, were sold for improper purposes, and professed to cure diseases incurable by medication. Some were "essentially and deliberately fraudulent," marketed by swindlers who exploited for their own profit the apparently invincible credulity of the public. Well might the Select Committee describe all this as a grave and widespread public evil. New legislation, it observed, was urgently needed; the existing law was chaotic and had proved inoperative; prosecution for fraud was hampered by the greatest difficulties, and the sale and advertisement of secret remedies went on practically uncontrolled. Foreign countries and the Dominions oversea managed to protect their citizens; in Britain the law was powerless. And this indictment has been left on the file for over twenty years.

Since 1914 Parliament has enacted useful reforms in kindred matters. The traffic in dangerous drugs has been restricted; the standardisation of therapeutic substances has been secured, and the laws of pharmacy and poisons have (quite recently) been overhauled. But the Proprietary Medicines Bill, officially designed to give effect to the main recommendations of the Select Committee, though introduced in the House of Lords in 1920, was allowed to die quietly and still awaits its resurrection. When the Food and Drugs (Adulteration) Act of 1928 rewrote the familiar prohibitions on sales to the prejudice of the purchaser, the old exception in favour of patent and proprietary medicines was preserved. The Merchandise Marks Act penalises the sale of goods under a false trade description. In the main, however, the buyer is left to such redress as the common law affords him. Criminal proceedings for fraud break down for three simple reasons. First, in serious cases, as where drugs have been advertised to procure abortion, the police can hardly produce a witness to proclaim the illicit purpose of her purchase and her disappointment at its results. Secondly, the defendant often manages to call somebody who says the secret remedy has really done him good; thus a few dubious testimonials excuse a thousand other cases of sheer imposture. Thirdly, it is impossible to prove wilful misstatement and guilty knowledge where retailers are ignorant, as they usually are, of the composition of what they sell. A case at Liverpool in 1907 struck the Select Committee as typical. The label on a preparation (which was sold for 2*s.* 9*d.* though its materials cost about a penny) stated that it contained "the active ingredients and digestive qualities of the gastric juice in a highly concentrated and permanent form." The analyst's certificate showed water, traces of phosphoric acid, hydrochloric acid, nitric acid, and calcium phosphate, flavoured with chloroform and a vegetable bitter, and coloured with cochineal. The minute quantity of hydrochloric acid was the only conceivable part which resembled the gastric juice. The retailers, not

the manufacturers, of the remedy were prosecuted by the Liverpool Corporation. As it was not possible to prove their guilty knowledge, the prosecution was withdrawn, the defendants being awarded five guineas costs. It need scarcely be added that the City of Liverpool was thus discouraged from any similar action in the future. The Select Committee mentioned one other instance of the comparative impotence of our law. It was informed that an American called MACAURA had netted £60,000 by a campaign in England of advertising, exhibiting, and selling an alleged vibratory cure for many ailments, whereas for the same procedure in Paris he was promptly sentenced to three years' imprisonment and a fine.

The financial success of secret remedies was part of the evidence which convinced the Select Committee that the evil was widespread. It noted that the owner of "Dr. Williams' Pink Pills for Pale People" left a fortune of over a million pounds. Companies which make and sell proprietary medicines have flourishing balance sheets. Their main expenditure is in advertisement, and in this imperfect human world this outlay gives them no small influence over the press. The Proprietary Articles section of the London Chamber of Commerce estimated in 1914 that two millions were spent annually in this country in advertising proprietary medicines. The Select Committee observed that this expenditure led newspapers, either from discretion or under compulsion, to exclude the criticism or discussion of secret remedies. When the British Medical Association sought to educate the public by issuing its volume on "Secret Remedies," most newspapers (according to the Committee's report) omitted to give it any editorial notice; many journals, even those of the highest class, declined an advertisement of the book. There are newspapers which exercise a vigilant censorship over the advertisements of secret remedies; there are others which do not. Even the medical papers, remarked the Committee, have not been scrupulously careful—just as, in another sphere where laxity is unfortunate, members of the medical profession have not always refrained from giving testimonials to dubious preparations. It would be foolish now to dissipate energy or to weaken the common purpose by scolding one another. What is wanted is a better law more vigorously administered. The Committee placed on record instances of exaggerated claims which all can condemn. Here are two taken at random. Vitadatio "will cure the most severe cases of cancerous growths, tuberculosis, consumption, heart trouble, and tumours"; the Government chemist found it to be apparently a decoction of bitter herbs containing only 1·48 per cent. of total solids and no alkaloids or resins. Antipon, "one of the most valuable discoveries in modern therapeutics, solving once and for all the vexed question of the radical cure of obesity without harmful after-effects," was found to be a solution of citric acid in water, without medical effect upon corpulency. This latter example may be paralleled from the last annual report of the Ministry of Health which mentioned certain "slimming tablets" as consisting of a mixture of aperient drugs likely to cause chronic purging. The salesmanship of the advertisers moves with the times. "Mother Seigel's Syrup," for instance, no longer bears the romantic statement that "an old woman, Mother Seigel, on her last legs with dyspepsia, was given up by her relatives and was allowed to wander in the lanes round her native village in Germany," where "one day she chewed a leaf of a herb, only found in those parts, and found immediate relief." The Select Committee opines that there was no such Mother Seigel and no such herb. The preparation, containing hydrochloric acid and borax, has been put forward as a cure for dyspepsia, liver complaints, and anæmia. It cannot be sold, unless smuggled, in Germany (where it is prohibited by name except on a doctor's prescription), France, Austria, or Italy. Britain alone enjoys this freedom. To fictitious names like "Mother Seigel" the Committee added evidence of other aids to success. It investigated an advertisement which read: "Fits—Clergyman offers prescription for 1*s.* 1*d.*—never fails." Application brought a prescription for "Koronium bromide" and a reference to the "actual manufacturers" in Cheshire. This was an invented name for strontium bromide, often prescribed for epilepsy, and purchasable, according to the Committee, at rates varying from 2*s.* to 3*s.* 8*d.* per pound. The Cheshire manufacturers sold it at 4*s.* 6*d.* for four ounces. The police found that the advertiser traded from a lock-up shop under the name of "Whitby and Co., chemists, opticians, and wine merchants." It will hardly be expected that the owners of secret remedies will place at the disposal of the public any new drug or new method of compounding known drugs. When the Committee looked into the less reputable concerns, it found proprietors whose commercial operations involved several aliases. Thus two Americans, VIRGIL P. NEALE and THOMAS ADKIN, were the Cartilage Company advertising a means of increasing height; as HARRIET META they sold a wrinkle eradicator; as KATHRYN B. FIRMIN, of the Roman Solvene Laboratory, they undertook to remove superfluous hair, and as EVERETT WOOD they offered to restore the hair to bald heads. Among other minor influences for misleading the public the Committee noted that the patent medicine stamp has been used as if it implied a Government guarantee. But the ridiculous anomalies of the Stamp Act deserve a chapter to themselves. Comic relief is rare in the statute book; no other country could produce such an example as the unrepealed schedule to 52 Geo. III. c. 150 with its list of drugs from "ADDISON'S re-animating European balsam" to "ZIMMERMAN'S stimulating fluid."

There is much to be said for the proposal that all remedies should exhibit their formula. An inventor has to disclose his secret to the Patent Office as a condition of protection. Why should the inventor of a medical preparation object to disclosure? The Select Committee, however, deprecated compulsory exhibition of formulæ

except in the case of alcohol, poisons, and other dangerous drugs. A technical statement of constituent chemicals, it said, would convey little to the public. Disclosure would invite unfair competition and ruin the investments of existing shareholders. The Committee nevertheless recommended that the formulæ of all secret remedies should be compulsorily communicated in confidence to a competent official appointed under authority of a Government department. This proposal formed part of the Bill of 1920. There was to be official registration of all proprietary medicines and proprietary surgical appliances as a condition precedent to manufacture or sale. Though the draft Bill which was mentioned to the Minister of Health last week has not yet been published, it is understood that it does not go so far as the Bill of 1920. For the present we must concentrate on a reform of the law which is practicable; it is imprudent to imperil the measure of agreement already attained or to antagonise vested interests unnecessarily. The draft Bill will be welcomed by the proprietors alike of respectable newspapers and of respectable remedies. The attitude of the medical profession will not be in doubt, although, needless to say, the proposals are not put forward in the interests of surgeon or physician but in the public interest. If the public is allowed to know the evils of the present system, the public will demand the reform. Nor will it wish to wait another twenty years.

GOLD AS A REMEDY

THE history of the gold treatment of pulmonary tuberculosis is well known. KOCH'S observation that potassium gold cyanide kills tubercle bacilli in vitro, though later shown to be irrelevant, is an impressive starting-point. FELDT'S compounds, aurocantan and krysolgan, were produced about the war period and attracted less attention in this country than MØLLGAARD'S sanocrysin in 1924. After the first wave of enthusiastic interest had passed, sanocrysin settled into a modest but significant rôle in the treatment of phthisis: clinical opinion, in this country at least, holds it capable of checking the destructive process in the lung in certain phases of the disease, but its effect is not predominant among the influences that determine the patient's course, and therefore, in series of cases such as the one reported by Dr. PETERS and Dr. SHORT in our last issue, its use may bring no amelioration of the death-rate.

Meanwhile other gold compounds have been made by the chemists and other fields of possible usefulness explored by the clinicians. Gold treatment of chronic arthritis began on the continent several years ago and is now attracting more notice here. Two months ago we published a report[1] from Liverpool that dealt with 100 cases of rheumatoid arthritis, osteo-arthritis, and "menopausal arthritis"; every patient received one course (occasionally more) of gold injections, in addition to routine dietetic and physical treatment, and five years after the series began Dr. PEMBERTON was able to classify 50 of them as cured or very much improved, and a further 38 as improved. And last week, another group of 100 cases[2] was reported by Dr. HARTFALL and Dr. GARLAND from Leeds. Although observed only in the past two years, these cases provided in some ways a more striking result, for physiotherapy and analgesics were withheld and gold was in effect the sole treatment. The arthritis was always of the rheumatoid type, its average duration was several years, and more than half the patients had previously had various kinds of treatment without lasting benefit. Gold was given intravenously, in small to medium doses, but the injection courses were repeated, with intervals of at least six weeks, two or three times or more. HARTFALL and GARLAND claim cure or marked improvement in 70 per cent. of the cases, but rightly point out that the method is still in an experimental stage, and much may yet be learned about optimum dosage and other therapeutic details. Gold has also been tried in syphilis, leprosy, actinomycosis, and other chronic inflammatory and granulomatous conditions, as well as in dermatology; in Germany it has been warmly advocated for asthma, "especially in cases where modern psychological treatment is unavailing"[3]—a claim supported by Dr. SOBHY'S letter in our issue of August 11th, 1934, and by Dr. BANSZKY in a note appearing on p. 79 of this issue.

Trial and error is the only method by which the value of gold as a remedy will be defined, and more trial is still necessary. The error, unfortunately, involves disasters as well as failures. Moderate reactions, in the form of fever, albuminuria, vomiting and diarrhœa, and erythematous skin rashes, are familiar to all who have used it. A severe exfoliative dermatitis occasionally occurs, and it is now being realised that fatal damage to the blood-forming organs can be caused by gold. The Leeds report already mentioned included two deaths from thrombocytopenic purpura, and a third non-fatal case is reported by Dr. HUDSON in our present issue. Almost nothing is known of the mechanism whereby gold acts, either beneficially or harmfully, and the harmful effects recorded seem to bear little relation to the preparation or the dose used. There is some evidence that severe purpuric reactions can be successfully combated by blood transfusion, and in Germany calcium administration is thought to protect to some extent against all toxic effects. Gold remains, however, a two-edged weapon, brandished in the dark. If, in such serious diseases as rheumatoid arthritis, it does good that nothing else will do, then a certain risk of harm can be justified. At the present stage in its history, it should clearly be used and investigated by experienced workers, who have groups of suitable cases under their control, and who are on their guard against its dangers; it is not a remedy for the therapeutic dilettante.

[1] Pemberton, H. S.: THE LANCET, 1935, i., 1037.

[2] Hartfall, S. J., and Garland, H. G.: Ibid., July 6th, 1935, p. 8.

[3] Feldt, A.: Fortschr. d. Therap., 1935, xi., 11.

HOSPITALS LARGE AND SMALL

THERE are now in London 145 voluntary hospitals which keep their accounts according to a uniform pattern[1] and submit these annually for publication as a condition of the support of King Edward's Hospital Fund. This fund compiles and issues separately every year: (1) a statistical summary of the income, expenditure, work, and costs of these hospitals; and (2) a statistical review of the total figures. The summary for 1934, just issued,[2] costs only a shilling, and contains a mass of information so aptly grouped and attractively presented that even those with no direct concern in hospital administration will find in it material of interest. The annual budget of all the hospitals combined, covering nearly 15,000 occupied beds and 10 million out-patient attendances, was in 1934 not far short of four million pounds. Those who cling firmly to the voluntary principle of making provision for the sick poor will be gratified to learn that 91 hospitals had a surplus, and only 54 a deficit, of income over expenditure during the year and that there was a net surplus for all the hospitals in 1934 of £93,000, or 2·4 per cent. of the total general expenditure. Perhaps the two most interesting items about each hospital from a broad point of view are (*a*) the percentage of the average bed complement which is vacant and (*b*) the annual cost per occupied bed. It is satisfactory to be assured in the prefatory note that the lowest cost per occupied bed is not intended to be taken as a model. All comparisons are with the average and even so, high cost is not necessarily interpreted as implying excessive or extravagant expenditure. It may of course mean relatively inefficient administration; but it may also mean a higher standard of diagnosis or treatment, or of general comfort than that deemed adequate in the average hospital of the same size or kind. For example, in some of the hospitals the establishment and maintenance of a bigger staff of trained nurses or of domestic help to relieve nurses for more important duties, or the provision of additional comforts for patients, are cited as causes of increase in the cost per occupied bed, which can be fully justified; similarly among the smaller hospitals the enlightened boards of management who are prepared to bear the overhead charges associated with radiology and pathology departments offer diagnostic advantages to the patients which are clearly worth while. The variation in the cost per occupied bed is enormous—from £71 at a heart hospital for invalid children to £339·8 at a hospital for Anglican clergy and their families. The average for all hospitals is £174·7, and it is of interest that of the 16 groups into which the 145 hospitals are classified the only ones which show a total cost per occupied bed above this average are Group I, the 12 general hospitals with medical schools covering 6000 beds (£203·2) and Group XI, the 9 maternity hospitals covering 600 beds (£176·9), the average percentage of available beds which are vacant being in each group approximately 11. Of the 10 small hospitals in Group VII (general and cottage hospitals under 40 beds, without a resident medical officer) which are often regarded as being relatively expensive to run, the cost per occupied bed in 9 instances is under the average for all hospitals; the exception has had more than 10 of its 18 open beds (58·7 per cent.) vacant during the year, and it is therefore less surprising that its cost per occupied bed should be £264·6. The only hospital averaging a still larger percentage of vacant beds is one of the smaller maternity hospitals, at which 65·4 per cent. of the 50 beds were generally unoccupied.

The question immediately arises whether hospitals with so many vacant beds are really filling a need which justifies their existence and are thus worthy of support, or whether they are only deflecting money and philanthropic effort which might more profitably be used elsewhere. This is not a problem of only local interest. There must be many hospitals outside as well as within the London area to which it applies. Recently we were asked by a correspondent whether there is justification for keeping open a cottage hospital of 30 beds in a district which could be served by another much larger and better equipped hospital. The annual income of the cottage hospital in question is £4000 and its expenditure £5000, and the struggle to keep it alive is arduous. Is it worth it? The question can certainly not be decided in the abstract, without a study of the conditions and needs and population of the district. The smaller general hospitals and cottage hospitals are often centres of local interest and local patriotism. It is a joy to many in the neighbourhood to work in and for these institutions and to contribute to their upkeep. In some places where a local hospital is successfully conducted it becomes almost a social centre. From the patients' point of view, moreover, it is always regarded as preferable to go to hospitals where they know the doctors in attendance, and where they can be easily visited by their relations and friends. The fact that the standard of work may be less high than in larger centres with many special departments is not appreciated by them. Local hospitals are, of course, of undoubted advantage to the general practitioners of the district, because the doctor is able to follow his patient into hospital and perhaps to continue in charge of his patient, or at any rate to discuss the case personally with the consultant, a discussion which may have high educative value. From a financial point of view, again, experience has shown that the closure of one hospital and the enlargement of another to take its beds is to reduce the combined income. There is, however, a real requirement for tabulation and analysis of the hospital facilities all over the country in terms of the needs of the population in the area. Such a survey was made for London in 1933, when the London Voluntary Hospitals Committee, in conjunction with the central public health committee of the L.C.C.,

[1] The Revised Uniform System of Hospital Accounts. London: George Barber and Sons. 1926. 5*s*.

[2] Obtainable from King Edward's Hospital Fund for London, 10, Old Jewry, London, E.C.2. Pp. 100. 1*s*.

carried out an exhaustive survey of the hospital accommodation available for those who live in the county.[3] The information collected was set out in detailed tables showing the number of beds in each hospital within the area and the use to which these beds are put; these tables included a statement of both in-patient and out-patient work at the several hospitals. The geographical relation of the hospitals to one another was graphically shown on two large-scale maps which were reprinted in reduced form and circulated with the report. A corresponding survey of hospital accommodation throughout the country would show the geographical relation of the smaller general and special hospitals to the larger and more centrally placed ones, and also the relation of the various hospitals to the density of population. The information thus provided would show up areas where increased accommodation is likely to be needed, or it might supply at a glance good reason why a certain hospital has an undue proportion of its beds unoccupied. Such a survey should include reports from authorised visitors of work done in the hospitals situated in each area and a statistical summary corresponding to the one for London to which we have referred above. If information were published on these lines, those hospitals which clearly fall below the average level in efficiency of administration and work done would have a great incentive to improvement. It is by no means clear that a survey would reveal that even quite small hospitals could be spared or that the present tendency towards centralisation in hospital affairs is likely to increase. Centralisation has many drawbacks, and the increasing speed and ease of making daily contact with scattered units may well produce a reaction in their favour.

If the local authorities and voluntary hospitals could be persuaded to collaborate in a joint national survey of this kind there is one respect in which they might with advantage depart from the pattern of the summary issued by King Edward's Hospital Fund. There the statistical cost of an out-patients' department is based on its cost per 1000 attendances. It is clear that this method of reckoning costs is a direct encouragement to hospitals wishing to demonstrate efficient and economical administration to maintain or increase the number of their attendances. It is now generally admitted that a large proportion of the attendances represent work which could properly be done by general practitioners[4]; but hospital authorities are hardly likely to give ungrudging help in thinning their lists while the costs of their out-patient departments are reckoned and compared on the present basis.

[3] Summarised in THE LANCET, 1934, i., 323.

[4] See THE LANCET, 1935, i., 1521.

ANNOTATIONS

SUICIDE

SUICIDE is so important a problem that its study from every angle should be encouraged. It is, however, desirable that the methods used in its investigation should be such as may throw further light on its causes and its prevention. To use clinical material in such a way as only to confirm what psychiatrists and sociologists already know of suicide is not to make the best use of it. These reflections are prompted by the study[1] published by Miss Stoneman, Ph.D., a psychologist who investigated the cases of attempted suicide admitted to a certain ward in the Royal Infirmary, Edinburgh, during the years 1932–1933. This work is a good example of the kind of painstaking inquiry that fails through unsuitable choice of material and method. The author's procedure was in the main the psychiatric one of inquiry into the history of each patient and into the background of the immediate situation. Motives were discussed with the patient at length, psychological tests were given, and in themselves the case-studies are as complete as possible. From these studies, however, Dr. Stoneman draws some statistically unacceptable conclusions, to which she appends a new psychological theory to account for attempted suicide.

Suicide is, in fact, here investigated as a problem in itself. But suicide is only a problem in itself if one eliminates all that persons who attempt it have in common with those who do not. Many depressive patients, for example, never attempt suicide; it would be useless to look in them for the causes of suicide though one might well look for the causes of depression. But if one who examined depressive suicides might discover only the causes of their depression, he would not have advanced his knowledge of the causes of suicide in depressive persons. The same may be said of the many other people who attempt suicide; to investigate them without control material may throw light on many things but miss the essential point under consideration. Dr. Stoneman's notes of 87 patients reveal, for example, that distress, whether occasioned from without or from within, is the commonest state before suicide. She finds in these cases adverse social forces, adverse individual endowment, drunkenness, disease, thwarted desires, and the other causes of unhappiness or of an unbalanced attitude towards life and death. But this adds nothing to our knowledge. It is true that hardly any people commit suicide when they are happy, and that the causes of unhappiness are in some measure the causes of suicide. But suicide cannot effectively be studied without regard to the different kinds of disturbance of mind and adaptation in which it occurs. There may be little in common as regards causation and prevention between the hysteric who dramatically takes poison, the hapless lovers who decide to die together, the melancholic who cuts his throat, the fanatic, the martyr, and others of the great army of suicides. Nor can unsuccessful suicides be taken as representatives of suicides in general. Among them may be many who have not made a genuine attempt to kill themselves at all. Conclusions drawn from them may show why apparent suicidal attempts fail or what determines the choice of an ineffectual method, but not necessarily much about the cause of the attempt; in studying these cases one is after all studying "suicide" that is not suicide in act, whatever one may suppose it to have been in intention. If suicide is to be investigated as a

[1] Halfway to the Hereafter. An Enquiry into the Motivation of Attempted Suicide. By Ethel Turner Stoneman, B.A., A.M., Ph.D. Perth, Western Australia: T. F. Christie. 1935. Pp. 96.

single specific problem, somewhat rigid statistical methods are required, because there are so many variables. Such studies as those of Donalies in Berlin, and Lendrum in Detroit upon unsuccessful suicide, and the wide surveys of Dublin and Bunzel, Loewenberg and many others show what constant findings a careful statistical treatment yields.

Studies of suicide as a particular aspect of depression or some other psychiatric syndrome, or as an expression of fear or hate or death-instinct, according to this or that psychological theory have of course their place, though often they are either too general or too conjectural. The psychological approach must leave unanswered many social and biological problems that are of the first consequence in prophylaxis, and it is possible that at this stage sociological inquiries are likely to be more fruitful than are further psychiatric ones. We know that such things as economic hardship or the "featuring" of suicides in the press contribute to a rise in the suicide rate; but we can do little as yet to influence these. We know that competent psychiatric diagnosis and treatment can often avert suicide, but we cannot always prevail against public prejudice in regard to such treatment, especially if it is to be in an institution; and at the moment concentration on propaganda for mental hygiene and improvement of social condition is needed more than inquiry into the individual miseries which precede the decision to end life.

ERRORS DUE TO ANTICOAGULANTS

THE possibility that the anticoagulants in general use may cause errors in blood analyses has been suspected for some time. I. Blitstein[1] has now made a careful study of the variations which may be produced in this way. He has investigated the influence of potassium oxalate, sodium citrate, sodium fluoride, zinc sulphate, heparin, hirudin, and a proprietary anticoagulant called Liquoïde (sodium polyanethylsulphonate) on the following estimations: inorganic phosphorus, plasma proteins, chlorides, cholesterol, dry extract, and hæmatocrit. There are, he finds, two sources of error. First, the plasma becomes more dilute owing to water leaving the erythrocytes; this is dependent upon the increase in ionic concentration of the plasma due to the added anticoagulant. This effect is constant for the first four substances investigated and is in proportion to the quantity of the substance used. The second effect is more marked with fluoride and oxalate than with citrate and sulphate, and is due to the toxic action which these salts exert upon the envelope of the erythrocyte, whereby it loses the properties of a semi-permeable membrane and allows some of its contents to diffuse out into the plasma. The author concludes that these four anticoagulants should be discarded and that hirudin, heparin, or liquoïde be employed in estimations of hæmatocrit, dry extract, chlorides, and cholesterol. In determination of inorganic phosphorus, he holds, liquoïde only should be used as heparin contains traces of phosphorus and hirudin disturbs the colorimetric comparison. For plasma proteins, he believes that fibrinogen should be estimated by the refractometric method of W. Starlinger[2] and albumin and globulin from the serum. The interest in this paper lies in the conclusion that the anticoagulants in common use are those most apt to produce errors in estimations. Perhaps the point of greatest practical significance is that the hæmatocrit varies over a wide range with the four interdicted substances but is constant with the three others. The two blood analyses most helpful to clinicians—blood-sugar and blood-urea—have not been considered in this study.

[1] Rev. Belge des Sci. med., 1935, vii., 69.
[2] Biochem. Zeitschr., 1923, cxliii., 179.

THE ROYAL SURGICAL AID SOCIETY

THE annual report of the Royal Surgical Aid Society for this year has just appeared and the record of the work done shows that the society is living up to the high standard of practical utility which it has manifested since its start. And that is a considerable period, for it was established in 1862 at a time when no institution existed through which the needy patient could obtain much choice of the required surgical appliances. Many institutions did, and still do, largely assist discharged patients to obtain orthopædic appliances, this being particularly the case when an instrument of a certain sort was needed to maintain the improvement manifested and lead to further progress. But three-quarters of a century ago it was seen that such assistance was only applicable to the fringe of the manifest needs, and to-day, with the enormous growth of these needs, the value of the central organisation is more than ever obvious. The records in the annual report demonstrate how extensive and various are the wants of the applicants, and over 29,000 cases have had those wants supplied during the year under review. The charitable public has responded well throughout the history of the society, enabling it to continue its mission, but the committee appeal for more liberal support during the coming year, since there has been a slight falling off of income which does not accord with a certain abatement of general financial stringency. But while there has been a decrease in special donations in aid of cases, the payments received from patients themselves show a gratifying increase, while the cost of administration has remained almost stationary.

Accompanying the report there is an appeal for the constitution of a special fund to be devoted to the relief of cases in the Durham district. The demands from the distressed areas, Durham being taken as a centre, have increased to such an extent that the committee of the society do not feel justified in meeting them from the ordinary resources. There are, it seems, practically no subscribers to the society in the Durham district, and conditions being as they are it is obvious that assistance will have to be found from outside. Therefore the society is making a special appeal for the raising of a fund of at least £3000 in order to cope with this urgent situation, pointing out that if funds are forthcoming, enabling them to deal with the cases locally, a more direct control of the assistance will be created and trouble and postage saved on many fruitless applications by letter. Support in aid of this special appeal should be sent to the Royal Surgical Aid Society, Salisbury-square, London, E.C.

SYPHILUS AND SYPHILIS

IT is given to few men to achieve immortality by the expedient of inventing a single word. Such an unwonted survival has fallen to the lot of the poet-physician Fracastor, and in a fashion all the more curious because the fateful word occurs only in a somewhat uneasy addition to his poem as first written and finally taken as a part title for the extended work—*Syphilis sive Morbus Gallicus*. In this appended Book III, Fracastor relates how a certain shepherd, Syphilus by name, provoked Apollo by his impiety, and as punishment was smitten by a new disease which from this the name of its first victim his fellow countrymen called "syphilis." In a recent issue of

Fracastor's poem [1] his elegant Latin hexameters are printed on one page, and on the opposing page an English translation. Although this follows the Latin text closely, there is nothing in the easy and polished English prose to indicate that it reproduces accurately an original in another tongue. Mr. Wynne-Finch wisely gives his explanatory matter in a series of scholarly and delightful appendices, and limits his footnotes to the minimum necessary to explain the text. Mr. J. Johnston Abraham's erudite but most interesting preface tells of Fracastor's life and work, explains the range and purport of this famous poem, and recounts the circumstances of the great epidemic of the Morbus Gallicus. He declares his adherence to the theory of the importation of syphilis from America, brushing aside with a somewhat peremptory gesture the arguments against this theory. The collaborators have done their work so well that the result should attract a circle of readers of very diverse tastes. The classical and historical matter will, of course, have a wide appeal, but even the reader who had at the best but small Latin, and that long since worn threadbare, will not find his interest flag.

THE GROWTH OF KING'S COLLEGE AND HOSPITAL

WHEN John Curnow died in the year 1902 he had written and published, in the annual *King's College Hospital Reports*, a history of the college and hospital to the year 1880. In his obituary notice in the Reports doubt was expressed that a successor would be found with knowledge sufficiently deep to carry the history further. Fortunately however such a one has emerged in Willoughby Lyle, who has not only carried the unfinished task to 1934 but has rewritten and amplified the account of the early years.[2] Having been dean of the medical school for over 20 years, at a critical period in the hospital's existence, Lyle was well equipped for the task; but without his zeal, energy, and love for his school we should not have had such an interesting record of its 103 years' existence, or such a vivid and truthful description of its teachers and students. Not to King's men alone will this history appeal. Amongst the facts and events are many of wide and general interest.

The work begins with an account of the foundation of King's College and the medical department (1831–39) and there follows a description of the period of the first King's College Hospital (1839–61). This was the renovated workhouse of St. Clement Danes, in Portugal-street. The second King's College Hospital was built on an extended site of the first. It was opened in 1861, cost about £100,000 and had accommodation for upwards of 200 beds. The record of this second King's College Hospital is divided into the period before the advent of Lister (1861–77), the Listerian period (1877–1893), and the period subsequent thereto (1893–1913). The third King's College Hospital was opened at Denmark Hill on July 26th, 1913, by the King. It was designed when finished for 600 beds, and was admittedly, at the time, the last word in hospital construction. Within a year of the admission of patients the war broke out, and a large part of the new building became the Fourth London General Hospital (R.A.M.C.T.). After the war reorganisation became imperative; several new departments were created, promotions and new appointments were made, and the foundation was laid for the present excellent system of teaching. In the course of each section Lyle gives a chronological account of all important events, and a "medical history" of the representative King's men of the period. These personal records contain many interesting anecdotes. A short section deals with the interchange of teachers between King's and other metropolitan medical schools. An account is given of the establishment and progress of the Clubs and Societies Union. Though several inter-hospital athletic cups have been won, King's has never obtained the inter-hospitals rugby football or hockey cups. As an indication of the standard of medical work it is pointed out that the students have gained 108 gold medals at the university of London in the past 100 years. Tribute is paid to the second Viscount Hambleden, as a "public-spirited unselfish gentleman" who has been the hospital's greatest benefactor. This account of "King's" furnishes a valuable record of its development from being the mere department of a College (1830–1909) to the independent position of one of the constituent medical schools of the university of London.

FOOD POISONING

INVESTIGATING an outbreak of food poisoning is as fascinating and difficult a task as investigating a crime. In both the time factor is all-important; statements must be taken and clues examined before the passage of time blurs or destroys them. In both the coöperation of a number of experts and of the general public is necessary for success, and in both there is a central authority—the Ministry of Health or Scotland Yard—ready and eager to assist. Finally in both situations the investigation must proceed according to an orderly plan of campaign, and for food poisoning the Ministry have recently issued [1] what may be called a strategical plan, with notes on tactics, which every medical officer of health would do well to keep by him and use as a basis for any investigations he may have to make. The memorandum is a revised version of one issued in 1921, with an additional appendix giving technical hints on the identification of the salmonella types, the latter following the lines of the suggestions in the annual report of the chief medical officer of the Ministry of Health for 1933. It is to be noted that the specific duty is laid on the medical officer of health to report any serious outbreak of disease to the Ministry and also to furnish a copy of any special report which he may make to his authority, but otherwise he is free to carry out the inquiry on his own lines to and make use of local facilities for the bacteriological examinations if he so wishes. In outbreaks of food poisoning which are not of bacterial origin, the specimens will usually be sent to the public analyst appointed by the local authority; but in bacterial cases the chemical determination of the presence of "ptomaines"—in the sense of alkaloidal substances produced by bacterial action in meat foods—is held to be of no value. The memorandum also contains practical instructions for the collection, packing, and transmission of material, and suggests that the bacteriologist should always be consulted as to which specimens will be most instructive.

The incidence of food poisoning is by no means

[1] Fracastor: Syphilis or the French Disease. A Poem in Latin Hexameters by Girolamo Fracastoro. With a Translation, Notes, and Appendix by Heneage Wynne-Finch, M.A. Oxon., and an introduction by James Johnston Abraham, C.B.E., D.S.O., M.A., M.D. Dubl., F.R.C.S. London: William Heinemann (Medical Books) Ltd. 1935. Pp. 253. 10*s.* 6*d.*

[2] King's and some King's Men (London). By H. Willoughby Lyle, M.D., F.R.C.S. Oxford University Press. 1935. Pp. 615. 25*s.*

[1] Food Poisoning. Steps to be taken by Medical Officers of Health (outside London) in suspected food poisoning cases. Memo. 188/Med.

negligible. Every year some 40 to 70 outbreaks are reported to the Ministry of Health and in 1933 there were 66 outbreaks so reported with 15 deaths in the salmonella group alone. Often the article of food cannot be proved guilty; the police (so to speak) suspect the criminal, but evidence is insufficient to bring home the crime. But in every case the authorities depend in the first place on the willing coöperation of the practitioner to bring his suspicions to the notice of the medical officer of health and to ensure that specimens are preserved pending his investigation.

FOOD ALLERGY AND DIGESTIBILITY

STRICTLY speaking, the term "food allergy" implies the entrance into the blood stream of an unchanged food protein absorbed from the intestine and escaping destruction in the liver. Such an occurrence, as Alvarez[1] points out, is more likely to bring about disturbances away from the intestinal tract (e.g. urticaria) than local digestive symptoms like colic, nausea, or diarrhœa. In actual practice, however, supposedly allergic disorders such as migraine, angioneurotic œdema, and urticaria are not very often traceable to food sensitisation; thus in Alvarez's cases of severe urticaria, seen at the Mayo Clinic, it seldom proved possible for him or for the patient to pin the blame on any food. Another difficulty is the fact that supersensitiveness to some foods is apparently intermittent, varying with exercise, climate, and especially with fatigue and nervous strain. Finally, one has to reckon with an immense variety of possible noxæ; and it is no advantage, from the patient's standpoint, that the commonest foods such as bread, milk, and eggs seem also to be the commonest offenders—not the more easily delectable delicacies such as strawberries, caviare, or paté de foie gras. Alvarez and Hinshaw make the interesting suggestion that much of the digestive trouble caused by foods is due purely to irritation of the intestinal mucous membrane by the chemicals or cellulose they contain. On this view the "digestibility" of a food depends not upon its protein sensitisation action but upon some direct local effect, in the alimentary tract, of other substances besides proteins. Among 500 patients suffering (for the most part) from indigestion, Alvarez found that 7 per cent. were unable to drink milk because of severe distress; and 3 per cent. could not eat eggs, while many suffered after eating onions, apples, and cabbage. Chocolate, radishes, tomatoes, cucumbers, beef, coffee, lettuce, and many other foods were noted by patients as causative of indigestion. Such lists could of course be readily paralleled by many physicians, but extreme care is always necessary in drawing conclusions from patients' own deductions about their digestive capacities. Unfortunately Alvarez and Hinshaw's questionnaire gives no indication of the manner in which these various foods may cause their distressing effects, but their paper serves the valuable purpose of emphasising the importance of factors other than protein sensitisation in producing food indigestion. In our issue of June 29th Dr. W. C. D. Maile and Dr. K. J. L. Scott draw attention to the well-known effect of water taken with food in increasing the absorption of such a substance as sugar from the stomach, and to the fact that boiled milk is somewhat more rapidly emptied from the stomach than unboiled; and if such a relatively simple process as gastric emptying-time may be regarded as any indication of digestibility of foods it is evident that very small changes in the composition of a meal may produce quite obvious changes in "digestion." At the same time, minor psychic disturbances have so great an effect on gastric secretion and motility that all such observations have to be treated with reserve.

[1] Alvarez, W. C., and Hinshaw, H. C.: Jour. Amer. Med. Assoc., June 8th, 1935, p. 2053.

THE IRISH MEDICAL ASSOCIATION

AT its annual general meeting last week the Irish Medical Association gave approval unanimously to the proposal to amalgamate with the branches of the British Medical Association situated in the Irish Free State. For the last year and a half negotiations have been taking place between the representatives of the two associations and a draft agreement has been arrived at. This provides for the establishment of an autonomous Irish Free State Medical Union, consisting in the first instance of the members of the two existing associations who are resident in the jurisdiction of the Irish Free State. Members of the Union who leave the Irish Free State to reside in Great Britain will automatically become members of the British Medical Association, and members of the latter who go to reside in the Irish Free State will become members of the Union. From the point of view of the British Medical Association the Union will be regarded as a group of branches and will be represented by one member on the council of the Association. The Union will, however, be, as regards its work at home, completely autonomous, and will be responsible for its own government and by-laws. The members of the Union visiting London will be privileged to enjoy the amenities of the British Medical Association hours to use its library.

The Irish Medical Association has shown wisdom in deciding as it has. With a history of ninety-six years of useful work for the public and the profession to its credit a decision to merge its individuality in a newly formed organisation could not be undertaken lightly. It was clear, however, that the maintenance of two professional organisations in Ireland, engaged in almost identical work, was wasteful and cumbrous. Moreover, although there was cordial coöperation between the two bodies, neither could claim the prestige, influence, or authority that goes of right to a single representative organisation. It is designed that the amalgamation of the two associations should lead to members of the profession who have hitherto been unattached now giving their adherence to the Union. There are between two and three thousand medical men practising in the Irish Free State, of whom probably about one-third are members of one or both of the existing organisations.

LIVERPOOL VOLUNTARY HOSPITAL.—The report of the Commission which recently investigated the position of the voluntary hospitals of Liverpool has led to the establishment of a Liverpool Voluntary Hospitals Board, which has now had its first meeting. The eleven members include Prof. Henry Cohen, F.R.C.P., Mr. C. A. Wells, F.R.C.S., Mr. J. Bagot Oldham, F.R.C.S., and Prof. R. E. Kelly, F.R.C.S. The board is to investigate the proposals of the Commission and advise the nine teaching hospitals of Liverpool on their problems; it is also authorised to negotiate with the municipal authorities. The Commission took the view that the governing bodies of the four general hospitals must be amalgamated.

PROGNOSIS

A Series of Signed Articles contributed by invitation

LX.—PROGNOSIS IN ACUTE EMPYEMA

THE considerations which influence the prognosis in acute empyema are numerous, as might be expected in a disease presenting so many different types; the causative organism, the age of the patient, the nature of the pus, and position and extent of involvement of the pleura are all important. Again, empyema is peculiarly liable to complications, both local and in other parts of the body, and delay in diagnosis, which is often obscure, and the particular methods of treatment employed have considerable influence. Recovery is often so complete that no permanent effects follow, and naturally this is more likely in the less extensive and more rapidly cured cases. A large proportion, however, must be expected to have lasting effects of greater or less severity, such as flattening or lack of development of the affected side of the chest, scoliosis, pleural adhesions, and thickened pleura.

Empyema may cause death by compression of the heart and lungs, pulmonary or cerebral embolus, pericarditis, peritonitis, cerebral abscess, septicæmia, pyæmic infections of bones or joints, toxic exhaustion, or rupture into a bronchus.

Causative organism.—The streptococcus is responsible for the most dangerous cases, and infection of the pleura by this organism may follow pneumonia or broncho-pneumonia, particularly of the type complicating influenza, or may be part of a blood-stream infection from tonsillitis, osteomyelitis, or the like. A specially fatal form is met with after measles or broncho-pneumonia following measles, and such cases rarely recover. Pneumococcal empyema, on the other hand, is far less serious, whether it follows pneumonia or is a primary infection; the patients are not as a rule very toxæmic, and any severity of symptoms is largely due to the mechanical effects of an exceptionally large collection of pus. Owing to the thick consistency of the pus and the large lymph deposits drainage is necessary, and the chief danger of this form of empyema is avoided if secondary streptococcal infection is prevented.

Age.—In infants under two years acute *streptococcal* empyema is a fairly common complication of broncho-pneumonia and has a high mortality, however carefully the case is dealt with. *Pneumococcal* empyema is, of course, very often met with in children. In the first three months or so of life the disease has a high death-rate; after this age, even in babies of less than a year, the results have been much improved by valvular methods of drainage and the exclusion of secondary infection; in these days the mortality from pneumococcal empyema should be under 5 per cent. This is a great advance on the time when open drainage was practised and caused collapse of the lung and a sucking wound of the pleura, so frequently to become infected with streptococci after a few days as the result of inspiratory aspiration while the dressings were being changed.

Adults are better able even in such conditions to resist the secondary infection; in a large proportion of adults the empyema is localised, so that even open drainage is not followed by bad results. In old age, however, the prognosis is disproportionately bad, for old people put up a poor fight against infections wherever they occur, and empyema is not uncommonly the result of a lung abscess or gangrene, conditions in themselves very dangerous and usually implying a mixed infection from the beginning.

Type of operation.—An operation which provides "closed" or valvular drainage has considerably modified the outlook, especially in pure pneumococcal cases, for it allows the escape of pus while at the same time preventing regurgitation and secondary contamination through the wound; also the lung is encouraged to expand early and become adherent to the chest wall so that the empyema is soon localised to the region immediately about the tube. Such valvular operations even give a higher rate of recovery in streptococcal and putrid types, though in these infection of the chest wall, often spreading cellulitis or erysipelas, is commonly met with and cannot certainly be prevented.

The closed methods, involving a small intercostal incision and the use of a catheter or other small valvular tube, I do not regard very favourably, particularly because of the liability to interruption of the drainage by plugs of lymph. The operation that I have for many years found the most satisfactory is to resect three inches of rib and sew in a thick-walled rubber tube with a diameter the width of the rib resected; skin and muscles are sutured around this tube with drainage of these planes in all but pure pneumococcal cases; the tube is prolonged distally by collapsible Paul's tubing which closes during inspiration and allows exit only of the discharge. The best drainage and most rapid healing are obtained by resection of the eighth rib some two inches in front of the inferior angle of the scapula; this region is also the most suitable for aspiration of generalised empyema. Where drainage has been established here, healing usually follows rapidly after removal of the tube on the tenth day. Necrosis of the cut ends of the rib is a very rare occurrence, though it is often suggested as the cause of delay in healing; a far more common cause of persistent discharge is the formation of a bridge of bone between the cut ends, so that the track is partially or completely surrounded by a bony ring which impedes drainage.

ASPIRATIONS—DRAINAGE

In suitable cases repeated *aspirations* have done much to diminish mortality, especially in streptococcal and post-influenzal cases, in "putrid" empyema or where the infection is from the beginning a mixed one, and in pyopneumothorax. During active pneumonia operation should not be performed, but the case should be tided over by aspiration. If the general condition does not deteriorate aspiration may be repeated daily until the empyema has become at any rate partially localised or the discharge has become thick; but when in spite of aspiration the temperature rises to a high level at night and toxæmia is severe, especially with a steadily rising pulse-rate, valvular drainage must not be delayed.

As a general rule, collections of thin pus may be aspirated and drainage is indicated when the pus is milky. When on repeated aspirations the fluid rapidly reaccumulates in large amount, and instead of gradually changing to thick pus it remains thin, the prognosis is bad and failure of eventual recovery is to be feared.

In nearly all cases *drainage* is in the last stage necessary to finish off the remaining localised abscess and minimise pleural adhesion. A small empyema may become cured spontaneously by inspissation of its contents or by evacuation through a bronchial fistula; even large ones have in exceptional cases undergone spontaneous cure by becoming encapsulated

by fibrous tissue or by rupturing through the chest wall or into a bronchus; but for practical purposes such phenomena are unimportant, for nearly all cases will die unless surgical treatment is adopted. In pneumococcal empyema, even though generalised, early drainage seems to give the best results, but one aspiration on the day before operation temporarily improves the patient's condition and lessens the severity of the operation.

DOUBLE EMPYEMA—THE ANÆSTHETIC

Double empyema is naturally more serious than single, and has a correspondingly high mortality; fortunately the condition is not often met with. Drainage of both sides at the same time should never be done. Successful results have been obtained by establishing valvular drainage on one side and daily aspirating the other until the empyema operated upon has become localised; the second side has then been submitted to valvular drainage about four days after the first operation.

The *anæsthetic* is important, and in adults the outlook is improved by avoiding the use of a general anæsthetic. It is a simple matter to infiltrate the skin and muscles with novocain and block three intercostal nerves near the angles of the ribs; such local analgesia is especially indicated for old people. In young children and certain other cases a general anæsthetic must be used and open ether is usually the most suitable. The patient should be placed in position for operation before the induction is commenced. Ether is well tolerated, even in the presence of bronchitis, and appears to be less irritating to bronchi and lungs than is chloroform; gas and gas-oxygen are unsuitable for cyanosed patients and are contra-indicated for empyema operations.

During operation on a generalised empyema the danger of sudden death from displacement of the heart and mediastinum is a real one; it is diminished by preliminary aspiration, and in other cases must be guarded against by keeping the pleural wound closed as much as possible by fingers and swabs to prevent sucking in of air.

LOCALISED EMPYEMA

Localised empyema occurs in four typical situations—i.e., (1) in contact with the lateral chest wall between it and the lung; (2) lower down between the lateral chest wall and the diaphragm; (3) posteriorly in the angle formed by the vertebral bodies and the posterior ends of the ribs; and (4) between the lobes of a lung. 1. The first type gives the best prognosis, for it can be drained at its centre so that the lung speedily expands to diminish the cavity, and final healing should be rapid. 2. In the low lateral type by the partial collapse of the lung and rise of the diaphragm the drainage track tends to become oblique and narrowed, so that a bottle-necked cavity is formed; this is one of the commonest causes of persistent sinus and calls for resection of a portion of the rib or ribs behind the opening so as to obtain more direct drainage. 3. In the dorsally placed type, after drainage a rigid-walled dead space is formed which is obliterated slowly and with difficulty and tends to form tracks extending up and down for some distance from the tube; such cavities must be drained with a large tube until lipiodol injections and X rays show that the cavity has contracted down to a small circular area immediately related to the tube; this can then be removed and rapid healing may be expected. 4. Interlobar empyema possesses special risks, and the prognosis must be more doubtful than in any of the other localised forms. Delay is apt to occur in diagnosis, with resulting increase of toxæmia; efficient drainage may be more difficult and there is liability to pocketing; and bronchial fistula is a fairly common complication. In all cases of doubt as to the advisability of final removal of the tube two considerations should be borne in mind, continuation of drainage is necessary as long as there is a large amount of thick discharge or if lipiodol shows a large cavity.

BRONCHIAL FISTULA

Bronchial fistula is a more frequent complication of acute empyema than is perhaps generally appreciated, and according to some authorities occurs in as many as 10 per cent. of all cases; it is more common in children than adults. Rarely does its occurrence allow sufficient drainage to produce a natural cure; on the contrary, it is often the cause of death from infection of the other lung, from the establishment of a pressure pneumothorax by the sucking of air into the pleural cavity in a valvular manner, or by the admission of secondary infection. When rupture into a bronchus occurs pneumothorax is the usual immediate result. Such rupture is often precipitated by the sudden change of pressure while an empyema is being aspirated.

Foul-smelling pus from an empyema indicates a mixed infection and is usally present if there has been a communication with a bronchus; in the absence of streptococci the foulness of the pus is not an indication of special severity.

C. W. GORDON BRYAN, *M.C.*, F.R.C.S.,
Senior Surgeon, Paddington Green Children's Hospital; Senior Surgeon to Out-patients, St. Mary's Hospital.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Comdr. L. A. Moncrieff placed on retd. list at own request with rank of Surg. Capt.

Surg. Comdr. (retd.) R. N. W. W. Biddulph promoted to rank of Surg. Capt. (retd.).

Surg. Comdr. G. W. Woodhouse to *Victory* for R.N.B.

Surg. Lt.-Comdr. J. M. Sloane to *Glorious*.

Surg. Lt.-Comdrs. (D) L. A. Moules to *Ganges*; F.W. Watt to *Valiant*; and R. J. M. Andrews to *Victory* for R.N.B.

Surg. Lts. B. R. Alderson to *Pembroke* for R.N.B. and to *President* for course; G. D. Webb to *Victory* for R.N.B.; A. P. C. Clark to *York*; D. C. Dobson and J. M. Holford to *Pembroke* for R.N.B.; D. W. Pratt, S. J. Van Pelt, and S. C. S. Cook to *Victory* for R.N.B.; and M. Cay and R. H. A. Turner to *Drake* for R.N.B.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Comdr. C. A. Clark to *Drake*.

Surg. Lt.-Comdrs. A. S. Bradlaw to *Victory*, and H. M. Willoughby to *Caledon*.

Surg. Lt.-Comdr. G. F. Abercrombie to Surg. Comdr.

Surg. Lt. D. Simpson transferred from list 2 to list 1 of the Mersey Div.

Surg. Lts. C. A. Mather to *Pembroke* and to *Pegasus*; E. H. Parkinson promoted to Surg. Lt.-Comdr., J. F. M. Milner to *Drake* and to *Ramillies*; and G. L. Foss (proby.) to *Drake* and to *Titania*.

R. C. Anderson entered as Proby. Surg. Lt.

ROYAL ARMY MEDICAL CORPS

Maj. D. C. Monro to be Bt. Lt.-Col.

Capt. J. R. McDonald, M.C., to be Maj.

Lts. to be Capts.: A. G. D. Whyte, R. A. Stephen, A. J. Clyne, C. M. Fraser, D. S. Anderson, and A. D. Forgie.

ARMY DENTAL CORPS

Capt. B. Abbott to be Maj.

TERRITORIAL ARMY

Lts. H. B. Lee and C. F. Critchley to be Capts.

SPECIAL ARTICLES

THE ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION

THE ninety-fourth annual meeting of the Association took place at Chandos-street and the Westminster Guildhall on July 3rd, 4th and 5th, under the presidency of Dr. REGINALD WORTH, medical superintendent of Springfield Mental Hospital. Among the distinguished foreign guests were Prof. M. Laignel-Lavastine (Paris), Dr. Jacques de Busscher (Brussels), Dr. Robert Largeau (Paris), Dr. Jens Chr. Smith (Denmark), Prof. A. J. Westerman-Holstyn (Netherlands), and Prof. W. Mayer-Gross (Heidelberg).

The presidential address by Dr. Worth dealt with

Four Decades of Psychiatry

Dr. Worth paid a tribute to the broad-minded policy pursued by the Middlesex County Council in matters concerning the welfare and treatment of the mentally afflicted, and alluded to the new mental hospital at Shenley, which was visited by the Association on July 5th. After criticising a number of new methods and vaunted aids, he confessed himself as much bewildered now when confronted with a case of psychosis as he was at the outset of his career, largely because the causes have escaped recognition in spite of vigilance. He had much to say in condemnation of exhibitionism, loose talk, and pornographic pot-boilers, which he regarded as a feature of present-day life that must lead to a very undesirable state of society. Psycho-analysis was, he said, still very controversial, and acrimonious discussion on it had not been stilled. There were numerous temperamental differences in people, involving varying response to psycho-analytic theory, but he did not deny its capacity for the elucidation of mysterious ailments of the mind. By accepting some of its postulates one could determine a fairly definite mental pathology, such as the mechanism and mode of evolution of neurosis and psychosis. But the over-emphasis of sex had given definite offence to certain individuals. In recent years he had been much impressed by the increasing amount of adolescent psychosis, and asked whether this indicated that the present generation was breeding a greater number of psychopaths. In searching for hereditary factors, the figures were largely vitiated by the wide practice of family limitation. He was inclined to impeach the complications of modern life. The problems of mental involution would ultimately, he thought, be solved in the laboratory. Dr. Worth criticised the nomenclature of mental disease, and concluded by dealing with the chemical, biochemical, and physical aspects of insanity, expressing the belief that better histological methods and further research into structure and function must contribute vastly to the elucidation of the mysteries of mental disorder which, so far, had not been cleared up. There was on foot now, he said, a movement to oust the medical superintendent from his position of head of affairs in his own hospital, the suggestion arising to appoint lay directors or managers to mental hospitals, and a move was being made to deprive mental hospital visiting committees of their statutory powers. To these proposals he was strongly opposed.

The Dissertation Prize was awarded to Dr. A. GUIRDHAM, of Brentwood Mental Hospital.

Dr. THOMAS D. POWER read a paper on

Modern Endocrinology and Mental Disorder

He said that the more recent developments in endocrinology were of great interest to the psychiatrist. The pituitary gland, which was closely connected with the diencephalon, was found to exert a profound influence not only on the rate of bodily growth, but also upon sexual development and metabolism. It exercised most of those functions through the medium of other members of the endocrine group, while the latter, in their turn, had the power of influencing the pituitary. These relationships were very complicated and not yet understood. It seemed that one of the functions of the pituitary was to supplement certain forms of nervous activity by initiating a series of chemical changes in the body, and that, in this respect, it was subservient to the organic needs of instinct. Dr. Power described a number of investigations which he had carried out, and said it seemed probable that all instinctive and emotional activities were accompanied by subtle alterations in hormonal balance, and that those, in turn, influenced neuronic processes. The pituitary had some claim to be regarded as the master gland of the body. It was easy to imagine how a profound emotional disturbance could be perpetuated by endocrine disharmony, and so prove susceptible to substitution therapy. A combination of anterior pituitary hormones suitable for hypodermic injection appeared to be a desirable therapeutic agent, but, until such a preparation was placed on the market, workers in this field must content themselves with minor laboratory and clinical experiments.

Dr. F. L. GOLLA, Prof. LAIGNEL-LAVASTINE, Major J. E. DHUNJIBHOY, and Dr. DAVID SLIGHT (Montreal) discussed the paper.

Dr. H. C. BECCLE described some recent investigations into

The Hæmatology of the Psychoses

He said that much research had been carried out in recent years on the structure and function of the blood elements, with a view to ascertaining whether there were any regular quantitative and qualitative changes in the cells which would prove of diagnostic and prognostic value in disease, and, naturally, special attention had been devoted to the reaction, if any, of the reticulo-endothelial system to psychosis. This communication was concerned with certain changes in the neutrophilic polymorphonuclear leucocytes in disease, especially mental disease, to which he had been devoting attention at Springfield Mental Hospital for some time. With regard to the sudanophil granules, it was not yet definitely established whether they were manifestations of endogenous leucocyte damage, or were true inclusion substances resulting from phagocytosis of tissue cells. Jonescu had investigated 80 cases of various acute, subacute, and chronic diseases, and found that in a large proportion of his patients the number of granules of both varieties followed somewhat closely the course of the disease. That worker came to the conclusion that a quantitative estimation of sudanophil and toxic granules was of diagnostic import, and when made at intervals gave a useful prognostic indication. Dr. Beccle therefore thought such estimations might be of value also in the psychoses. It could be stated, in a general way, that the higher the granule count the more severe was the infection or disease. He described the technique he followed, and the frequency of the various

examinations. In all, 20 acute and subacute cases were investigated; 15 normal people, including members of the nursing staff, were examined; and 10 chronic cases were also submitted to these tests. More cases, and especially more controls, were required to enable an assessment to be made of normal phasic events, but certain facts emerged from information already to hand. First, the toxic granules were found in much greater profusion than the sudanophilic bodies; secondly, while there was no close quantitative relationship between the two varieties of granules, there seemed to be a serial continuity between each series of estimations taken separately. Jonescu was definite in stating that sudanophil granules should never appear in the polymorphonuclear leucocytes under normal conditions; in his view they indicated chronic, possibly latent, infection. Dr. Beccle's own view was that a toxic granule count of 9 per cent. and a sudanophil count up to 5 per cent. could be regarded as normal.

In his group of 20 psychotic patients examined in the acute stages of their disorders, there was a fairly close relation between the intensity of the psychosis and the percentage of the sudanophil granules and the toxic granules, high figures indicating severe disability. Lower counts were associated with an abatement of acute symptoms. An instructive case was that of a female schizophrenic, of reaction type, aged 34. With the improvement in her mental condition the granule count fell from 74 and 46 to 32 and 4, these representing percentages of toxic and sudanophil bodies. There was also a moderately high sedimentation-rate and total white count, and there ensued a noticeable improvement here too. In a number of the cases he was not able to retain the patients long enough to make a proper investigation, but he felt able to draw certain conclusions. The toxic and sudanophil granule estimations appeared to follow the course of psychosis, varying directly with the intensity of the disorder. The gradual improvement in the counts observed in recovering cases must be ascribed, in part, to the general detoxication which was instituted in each patient soon after admission. It would be rash to infer, from the results of so few examinations, that these estimations had definite diagnostic and prognostic value, but he suggested that they might prove of considerable assistance. The paper was discussed by Dr. ROSA STERN, and Dr. BECCLE replied.

Dr. W. D. NICOL read a paper contributed by himself and Dr. E. LILIAN HUTTON on

Clinical Aspects of General Paralysis of the Insane

They said that before the days of malaria therapy general paralysis was regarded as an incurable disease with a fatal termination within a few years of its recognition. Some said it was not new to witness remissions of the disease which were regarded as cures, while others declared that the occurrence of remissions falsified the diagnosis. Another group held that the disease had changed in character. A Board of Control inquiry showed that of 624 untreated general paralytics admitted to mental hospitals in 1923, 90 per cent. had died by the end of 1927, and Dr. E. T. Meagher, who made the inqiury, said that complete remission of a year's duration was very rare. As to a possible change in the character and severity of G.P.I., it seemed possible that the modern arsenical treatment of syphilis had modified the subsequent development of neurosyphilis. Many patients denied syphilitic infection, and so had had no antisyphilitic treatment. A further question was whether the diminished alcoholism of the present era had been a factor in altering the picture. It must not be forgotten that a Wassermann-positive cerebro-spinal fluid did not necessarily mean that the case was one of general paralysis. There were three clinical varieties in which the serological findings were positive: (1) the true general paralytic, whom it should be possible to diagnose without laboratory help; (2) doubtful cases, having one or two vague symptoms, in whom a positive Wassermann should indicate the possibility of G.P.I. and so of therapeutic measures; (3) those in whom, during routine examination, a positive serum was discovered. Kraepelin's description of G.P.I. was "a progressive deterioration leading to complete undermining of the whole mental and physical personality, accompanied by peculiar irritative and paralytic phenomena." To-day, however, the disease was no longer a fatal one; a certain percentage of cases treated by malaria recovered sufficiently to justify their discharge, while in others the progress of the disease was arrested.

This paper was based mainly on 100 consecutive admissions of each sex. In many cases preparetic symptoms passed unnoticed for long periods, and only when they were pronounced did relatives remember less marked symptoms some time earlier. Changes in character, irritability, outbursts of temper, apathy, or emotional instability were frequent, as well as a general falling off in efficiency. Either insomnia or excessive sleepiness might be present, and slurring of speech was a very valuable sign, often an early one. Depression preceding the development of grandiose ideas was often observed. The simple dementing form was characterised by a general mental deterioration, but this must be distinguished from the type of confused paretic. Sometimes the clinical picture of the simple dementing case was tinged with a strong grandiose or confused element, and false hopes of recovery might be held out because of the presence of the confused element. Slurring of speech occurred in 80 per cent. of women patients. Increased knee-jerks and the Argyll Robertson pupil were present in about half the cases. The concurrence of tabes with G.P.I. was present in 5 women, and 6 men. Seizures very rarely occurred in the pure grandiose or confused types; they were most frequent in the simple dementing type, and were generally followed by some dementia; 23 men and 30 women had seizures. These cases with seizures were less likely than others to benefit from malaria therapy, and the seizures influenced the prognosis adversely. In 220 cases of each sex there was no patient younger than 26. Soon after 30 years of age there was a sharp rise among women, but the corresponding rise in men was delayed five years longer. After 59 in women there was a further presenile rise. A new clinical picture could now be seen, and what was once a typical paretic might be metamorphosed into a schizoid personality, while in others a hallucinatory psychosis might supervene. If a hallucinatory psychosis followed treatment, this fact was of grave significance.

A definite problem was presented by the patient who had been discharged in a good state of remission and then subsequently relapsed, and Dr. Nicol related several of these. It was matter for regret that some hospitals still precluded their general paralytics from receiving malaria therapy; no record had been published giving the fates of untreated general paralytics. The authors of this paper, however, had collected some evidence regarding untreated cases in the last ten years; 32 women and 23 men were not given treatment because of their poor physical condition on admission. Of the women, 10 were fulminating cases of the confused, manic, and depressed types; all died

within seven months of the onset of the symptoms; 16 of the remaining 22 women were simple dementing types and 14 were dead within two years of the onset of the disease. No good recovery in women over 50 years of age had occurred, and only 3 men over 50 had shown a good remission. Every good remission case was ready for discharge from hospital 6 to 9 months after treatment; it could be confidently stated that if a patient was not well enough to be discharged within 9 months of the end of the treatment, hope of recovery could be abandoned. In both sexes there was a high recovery-rate in the pure confused, grandiose or manic types.

It was rational to regard the symptomatology of this disorder as due to the abnormal functioning of the brain cells affected by the infective process; this might be due to either irritation of the cells, or to their destruction, giving rise to either positive or negative phenomena. It was possible for the irritation to subside without causing any permanent damage, and then the concomitant symptoms would disappear, and a cure, or at least a remission, might occur. But when cell destruction had taken place this recovery could not occur. The grandiose delusions and the maniacal outbursts, could it was suggested, be regarded as due to irritation. In the mixed types it was rare to meet with a good recovery, and even in cases of the kind showing improvement there was always some permanent defect. The age-incidence of the disease was earlier in women than in men, but in the latter the fulminating types were more common, as also were the confused and the mixed grandiose and confused types. Sometimes the typical picture of G.P.I. was superimposed on a pre-existing psychosis, and since the use of malaria therapy the remission of G.P.I. had been demonstrated in some cases, only to lay bare the underlying mental disorder. Malaria was disappointing as a therapeutic agent for tabes, and also in its application to those associated psychoses with presumably latent syphilis. He asked whether malaria was a prophylactic weapon for preventing the subsequent development of G.P.I. In many cases following malaria therapy all serological findings became completely negative.

Dr. Nicol and his colleague held that malaria was definitely indicated in the treatment of the true case of G.P.I. Syphilis seemed to be declining in its incidence. It had become fashionable to treat many cases of general paralysis without certification and in general hospitals; during the last decade many hundreds had been so treated. Statistics as to results under these circumstances as well as those in mental hospitals were required; the recovery-rate would never reach higher proportions until the disease was diagnosed earlier by physicians and treated immediately.

The paper was discussed by the PRESIDENT, Dr. F. L. GOLLA, Dr. W. M. MCALISTER, Dr. G. M. BLAIR, Dr. RALPH NOBLE, Dr. ROSA STERN, and Dr. ROY M. STEWART.

ANNUAL DINNER

The annual dinner of the Royal Medico-Psychological Association was held on Wednesday, July 3rd, at Claridge's Hotel, London, with Dr. Reginald Worth, the president, in the chair. A large number of members and guests were present.

After the loyal toast the position of mental health in relation to medical practice was considered in an interesting speech by Prof. D. K. Henderson. He spoke hopefully of the prospects of psychiatry which, once a neglected Cinderella, had now become one of the chief problems before her elder sisters, medicine and surgery. Mental health must be regarded as part of the general problem of health. If psychiatry be neglected, the result will be appalling, for what, he asked, is the utility of many public health measures with a population below the proper mental standard? The study of psychiatry must, therefore, be more intense than it has been in the past—the population must be watched from the beginning, from birth onwards. The ideal man had been described as one with the English gentleman's mind in the body of a Greek God. Towards the physical side of this ideal much was being done and the same attention must be devoted to the mental side. We have, he said, a population of all sorts, a certain proportion of whom have a disordered mentality, and to meet the situation it is necessary that the medical profession should be better educated in psychiatric problems and that the goodwill of the public should be obtained by propaganda and the publication of satisfactory efforts. The General Medical Council, in a new scheme for a reformed curriculum recently issued, has now laid stress on the value of psychiatry, and everyone is now awake to the fact that the training of the medical profession generally should be directed in accordance with this view, which implied that the psychiatrist should find his place in a well-coördinated medical course.

Sir Arthur Robinson began by expressing the regret of the Minister of Health that he had been unable to be present to meet the Royal Medico-Psychological Association, as he had to fulfil an engagement made before the recent change of offices. The toast was the toast of "Mental Health," and he said that it was a matter of no small significance that the person who answered the toast was the Permanent Secretary of the Ministry of Health and also of Local Government. Prof. Henderson had stressed the necessity for regarding mental health as a part of the one whole problem of health. He noted that in the years since the Ministry of Health was established progress in regard to mental health had been noteworthy. For example, the relation between physical conditions and mental health had been more deeply explored, and the results of this research were fruitful. Again, in mental health as in physical health, there had been clearer recognition of the necessity for early treatment, and this was recognised by the power given by the Mental Treatment Act of 1930 to local authorities to establish out-patient clinics, and by 1934 no less than 134 of these had been established. Or again, the same Act had enabled public hospitals to receive patients without certification, and it was noteworthy that in 1934 no less than 20 per cent. of the direct admissions to public hospitals were admissions of voluntary patients. These were a few signs of progress and development. Obviously much more remained to be done. The development of relations between those responsible for mental health and between the members of the general medical profession was a matter of increasing importance, especially in regard to the extension of the relation of general hospitals to mental treatment. Again, there required to be still further education of public opinion as to the needs of mental health and what is required to make full provision for them. At this point he referred again to the linking up of mental health with general health in the areas of local government, and said that he thought that very careful consideration indeed was required before the Association committed itself to a policy in the local areas of divorcing the Mental Health

Committee from other committees of the local authority, such as the Public Health Committee. It appeared to him that in the long run better progress was likely to be secured in the conditions of local government which actually prevailed by accepting the fact that there must be the closest possible connexion between the various organs of government in the shape of the committees of a local authority.

Sir Arthur referred to the presence of Lord Macmillan, whose outstanding services on the Royal Commission on Lunacy and Mental Disorder were in the minds of all of them, and had resulted in the passing of the Mental Treatment Act of 1930, some of the results of which he had previously mentioned. He closed by bringing the best wishes of the Minister of Health to the service of mental health and to the Royal Medico-Psychological Association.

Sir William Collins, in submitting the toast of the Middlesex County Council, claimed as an old municipal hack, more acquaintance with the County of London, its Lieutenancy and its County Council than with Middlesex, though he had a nodding and neighbourly acquaintance with that county. He recalled the Local Government Act of 1888 when London was dealt with as an incident in rural administration, and the new County of London was largely carved out of the side of Middlesex. While the population of the County of London, he said, had been falling since 1901, that of Middlesex had grown from half a million to one and three quarter millions, a reminder that the County of Middlesex is becoming largely a dormitory for London, and the "green belt" of which many dreamt 40 years ago as the boundary of the County of London cannot now be realised, though possibly some such belt might be established around Greater London. When he was elected to the L.C.C. in 1892 and served on the asylums committee, two things, he said, impressed him particularly. One was the need of more thorough research into the pathology of insanity, and the other was the need for pensions for the asylums officers. With regard to the first he had endeavoured to promote research by inaugurating the laboratory at Claybury with the late Sir Frederick Mott as pathologist, while in 1909 he introduced into the House of Commons a Bill which became eventually the Asylums Officers Superannuation Act. In coupling with the toast the name of Mr. Alderman Button, the chairman of the Middlesex County Council, a body which had just promised £100,000 to the University of London, he recalled the fact that Mr. Button sat for a time in the House of Commons but was now pursuing the interests of both physical and mental health in the serener atmosphere of municipal life.

The toast was replied to by Mr. Alderman Howard Button, who referred to Middlesex as the county, save Rutland, with the smallest acreage, and an enormous population. The county was responsible for the conduct of two admirable mental hospitals, those at Shenley and Springfield, though the institutions were actually in Buckinghamshire.

The toast of the visitors was proposed by Dr. W. G. Masefield, who said that the assembly of guests was very representative, including visitors from Belgium, Denmark, France, Holland, and the United States of America, all of whom were in the charge of the members of the Association, on "a purely voluntary basis." The toast was replied to by Lord Macmillan and Lord Wakefield.

Dr. Robert Hutchison, president of the Royal Society of Medicine, proposed the toast of prosperity to the Royal Medico-Psychological Association, coupling it with the name of Dr. Worth, who briefly replied.

MATERNAL MORTALITY AND NUTRITION

A NEW INQUIRY

THE People's League of Health has established a committee to consider the nutrition of expectant and nursing mothers in relation to maternal mortality and morbidity.

At an inaugural luncheon held at Claridge's Hotel, London, on July 5th, Dr. C. O. HAWTHORNE, chairman of the council of the League, said that its reports were intended to inform and arouse public opinion and official action. The immediate object of the new committee was to study the question of food in relation to the health of the mother and to inquire what part was played by quantitative or qualitative errors of diet in the pathetic chapter on maternal mortality and morbidity. The solution of this grave problem would not be found in emotional appeals or in exaggerated statements, and still less in panic.

Lord HORDER, welcoming the enterprise, declared his belief that the core of the problem of maternal mortality and morbidity did not lie in any shortcomings of the doctor or midwife, and that the orientation of study should be shifted in the direction of the fitness of the mother to bear her child. Other attempts to solve the problem had failed, but this one had not been tested. The word nutrition must be read in the widest possible sense. Probably physical fitness, mental fitness, and biochemical fitness all contributed to the nutrition of the expectant and nursing mother.

Prof. JAMES YOUNG also commended the object of the League in this matter, but at the same time emphasised the importance of the obstetric aspect of the problem. Much maternal mortality had its origin in the ineffective standards of service brought to bear on the practical application of the subject. The investigations in Rochdale were extremely relevant; until recently this area had had the highest maternal mortality in the country but, as the result of a comparatively simple effort to improve the obstetric service, the mortality had come down in the most gratifying and dramatic manner. There was in addition a large group of conditions operating adversely, for example, the toxæmias and metabolic disturbances. There was strong evidence that some defect in the diet of the mother might be operating. The possibility could not be eliminated that in death from puerperal sepsis after normal labour there might be some factor determined by inadequacy of nutrition during pregnancy. Many conditions of pregnancy were directly related to diet, as, for example, the condition of the teeth. Nor must the child be forgotten; the condition of the mother had a great effect on the teeth and bones of the child and in this way the obstetric welfare of the third generation might be affected.

Dr. R. VEITCH CLARK suggested that the relationship between nutrition and pregnancy was probably biochemical; the word "nutrition" must be taken in its widest possible sense. He was not satisfied that there was any relation between maternal mortality and morbidity and the amount of food taken. Even the establishment of definite negatives would be a contribution of no little consequence.

Mr. VICTOR BONNEY advocated the election of a small subcommittee for research; the services of people with both knowledge and time were essential for success.—Miss OLGA NETHERSOLE reported that the Royal College of Physicians of London at its next meeting would consider the appointment of a representative on the new committee.—DAME LOUISE MCILROY said that the investigation would entail two or three years' hard work, and the workers would probably find themselves up against some unknown quality in the patient herself.—Sir COMYNS BERKELEY observed that the subject was very complex.

A list of members of the committee follows. Asterisks denote that they are members in an advisory capacity only.

Sir COMYNS BERKELEY, F.R.C.P., consulting obstetric and gynæcological surgeon to the Middlesex Hospital, London.

Mr. VICTOR BONNEY, F.R.C.S., gynæcological surgeon to the Middlesex Hospital.

Dr. J. J. BUCHAN, medical officer of health for Bradford.

*Dr. W. L. BURGESS, medical officer of health for Dundee.

Prof. F. J. BROWNE, F.C.O.G., director of the obstetrical unit, University College Hospital, London.

*Prof. E. P. CATHCART, M.D., F.R.S., regius professor of physiology in the University of Glasgow.

Dr. R. VEITCH CLARK, medical officer of health for Manchester.

Miss M. L. CLARK, L.L.A.

*Dr. G. P. CROWDEN, reader in industrial physiology at the London School of Hygiene and Tropical Medicine.

Prof. S. LYLE CUMMINS, M.D., David Davies professor of tuberculosis, Welsh National School of Medicine.

*Sir HENRY DALE, F.R.C.P., F.R.S., director of the National Institute for Medical Research, Hampstead.

*Prof. L. S. P. DAVIDSON, M.D., regius professor of medicine, University of Aberdeen.

*Prof. J. C. DRUMMOND, D.Sc., professor of biochemistry at University College, London.

*Dr. J. S. FAIRBAIRN, consulting obstetrical physician and gynæcologist to St. Thomas's Hospital, London; president of the College of Obstetricians and Gynæcologists.

Dr. LETITIA FAIRFIELD, a senior medical officer of the Public Health Department, London County Council.

Prof. AMY FLEMING, F.C.O.G., director of the obstetrical and gynæcological unit, Royal Free Hospital, London.

Prof. W. M. FRAZER, M.D., medical officer of health for Liverpool.

Dr. JOHN GUY, medical officer of health for Edinburgh.

Sir LEONARD HILL, M.B., F.R.S., late director of applied physiology, National Institute of Medical Research.

*Mr. EARDLEY HOLLAND, F.R.C.P., obstetric and gynæcological surgeon to the London Hospital.

Prof. J. JOHNSTONE JERVIS, M.D., medical officer of health for Leeds.

Dr. R. C. JEWESBURY, physician in charge of children's department, St. Thomas's Hospital, London.

*Colonel P. S. LELEAN, F.R.C.S., professor of public health in the University of Edinburgh.

Dr. HELEN MACKAY, physician to the Queen's Hospital for Children.

*Sir ROBERT MCCARRISON, F.R.C.P., past director, Nutritional Research Pasteur Institute, Coonor, India.

Dr. A. S. M. MACGREGOR, medical officer of health for Glasgow (corresponding member).

Dame LOUISE MCILROY, F.C.O.G., late professor of obstetrics and gynæcology, University of London.

*Mrs. IAN MURRAY, Ph.D., of the University of Glasgow.

Dr. ELWIN H. NASH, medical officer of health for Heston and Isleworth.

*Sir JOHN BOYD ORR, M.D., F.R.S., director of the Rowett Research Institute, Aberdeen.

Dr. THOMAS ORR, medical officer of health for Ealing.

Dr. W. H. F. OXLEY, hon. medical officer, East End Maternity Hospital, London.

Dr. ERIC PRITCHARD, pædiatrician to Queen Charlotte's Maternity Hospital, London.

Dr. H. J. RAE, principal medical officer of health for Aberdeen.

*Sir JOHN ROBERTSON, M.D., late medical officer of health for Birmingham.

Dr. G. W. THEOBALD, consulting obstetrician and gynæcologist, St. Mary Abbots Hospital, Kensington.

Sir PENDRILL VARRIER-JONES, F.R.C.P., director of Papworth Village Settlement, Cambridge.

Miss JEAN WISHART, matron, Queen Mary's Maternity Home, Hampstead.

Prof. JAMES YOUNG, F.C.O.G., professor of obstetrics and gynæcology at the British Postgraduate Medical School, London.

MEDICINES AND SURGICAL APPLIANCES (ADVERTISEMENT) BILL

DEPUTATION TO THE MINISTER OF HEALTH

Sir Kingsley Wood, the Minister of Health, who was accompanied by Sir Edward Campbell, received a deputation on July 4th from the Parliamentary Committee on Food and Health.

The speakers were Lord Mamhead, Captain G. S. Elliston, Sir John Pybus, and Sir Francis Fremantle. The associations represented were:—

Advertising Association; Association of Municipal Corporations; British Medical Association; County Councils Association; Institute of Incorporated Practitioners in Advertising; Newspaper Society; Periodical Trade Press and Weekly Newspaper Proprietors' Association, Limited; National Association of Insurance Committees; Pharmaceutical Society of Great Britain; National Pharmaceutical Union; Surgical Instrument Manufacturers' Association Incorporated; Society of Medical Officers of Health; Parliamentary Medical Committee; and Parliamentary Committee on Food and Health.

Lord MAMHEAD, in introducing the deputation, recalled the fact that the Parliamentary Committee on Food and Health had first been constituted at a meeting held in 1911 and called by Dr. Addison, Lord Bledisloe, and others. It had always been a non-party and a lay body.

Captain ELLISTON said that the committee had had in preparation for some time the draft of a Bill to control the advertisement of medicines and surgical appliances. A Select Committee of the House of Commons, the appointment of which arose out of action taken by the Parliamentary Committee, investigated the question in 1912–14 and reported in favour of legislation. Several endeavours had been made since then to introduce legislation, but it had not been possible to make progress with a Bill. One of the difficulties had been that, in the past, it had been impossible to secure the agreement of the many interests concerned. The present Bill had been discussed with all the important interests affected, and a measure of agreement, never previously attained, had now been reached. The principal objects of the Bill were:

(1) To prohibit the advertisement of medicines, surgical appliances, or forms of treatment as effective for the cure or prevention of certain specified ailments, such as cancer and consumption, and

(2) To prohibit the publication of invitations to members of the public to obtain the diagnosis or treatment of these ailments by correspondence.

The Bill also contained clauses safeguarding the legitimate interests of those concerned, including newspapers and religious organisations.

Sir JOHN PYBUS, speaking as president of the Advertising Association, said that the Bill, if it were

accepted in its entirety, would not affect adversely any legitimate trade interest. It would, indeed, be helpful to the existing work of the department of the Association charged with the voluntary regulation of advertisements. Although the Newspaper Proprietors' Association had not committed itself to support of the Bill, its representatives had taken part in the drafting of the Bill and, in view of the safeguards for the newspapers which the Bill contained, there was no need to anticipate any opposition from this Association.

The MINISTER OF HEALTH, in replying to the deputation, expressed appreciation of the valuable work done by the Committee, and congratulations upon the great measure of agreement secured for their Bill. Although much useful work was being done voluntarily, and many newspapers already set a very high standard in the matter, legislation was undoubtedly needed. The subject was one in which he had himself long taken interest and, at the time when he was previously connected with the Ministry of Health, legislation had been contemplated. It had not, however, then been possible to proceed with a Bill. The deputation would not expect him to give at the present stage any definite undertaking that the Government could introduce legislation. Nevertheless he would have the Bill examined and would make further inquiries as to the amount of support which might be anticipated for it. If these inquiries proved satisfactory he could assure the deputation that the introduction of legislation would be considered sympathetically, if the Government's general programme of legislation made this possible.

Sir FRANCIS FREMANTLE expressed the thanks to the Minister on behalf of the deputation for their reception.

FACTORIES AND WORKSHOPS IN 1934

The Annual Report of the Chief Inspector of Factories and Workshops for 1934[1] has just been published. The year showed continued development of industry, notably in the south. More than half a million persons have been attracted towards London during the past seven years by new industries, representing an increase of some 27 per cent. of insured workers in the south-east. There was also evidence of a revival in some of the industries in the north, and in several places redundant cotton mills and weaving sheds are being converted to new purposes. Electric arc welding and the selenium cell are taking an increasing place in industry, and are playing a part in accident prevention. There has also been a revival in some of the rural industries, notably the production of Harris tweed. At the end of the year under review, the Department had on its registers 162,922 factories and 83,110 workshops, an increase of 2737 factories and a decrease of 3741 workshops on the preceding year. The Department received 3685 complaints, most of which related to conditions of employment; about half of them were substantiated upon inquiry. It also took part in a number of conferences.

One concerned a disaster in a bleaching works involving the death of four boys, and resulted in the formation of a committee to investigate the special risk. Two other conferences were undertaken in an attempt to design a code of rules to protect workers from the ill-effects of dust in the malting industry. Another considered steps to prevent danger to health from substances newly introduced into chemical manufacturing industries.

[1] H.M. Stationery Office, Kingsway, W.C.2, pp. 121, 2s. net.

LIGHTING AND NOISE

Advance in lighting efficiency generally has not kept step with progress in such matters as fencing and ventilation. Most foundries are still poorly lit, though in some instances a very high standard has been reached.

Most of the workshops where clothing is made suffer from severe glare; employers and operators alike do not or will not understand the necessity for reflectors of a suitable type. Potteries and steel-tool cutlery and silversmiths' trades also suffer largely from bad illumination; the danger is not confined to eye-strain, but may result in accidents of various kinds. Some artificial silk and hosiery works have improved the lighting of their intricate processes very considerably, tilting the machines to obviate glare from the needles and providing local points easily adjustable to various heights of knitting frames. The Report mentions one recently equipped vitreous enamelling department where walls, floor, and ceiling are dead white, lighted with 350-watt bowl-spread lamps without reflectors. The result is complete absence of both shadow and glare. The excessive lighting contrasts often found in printing and book-binding works have been found to cause headache and eye-strain, which have in most cases been completely obviated by better general illumination. In some large steelworks and foundries, mercury-vapour lamps have been installed, and are claimed to be particularly suitable, because they are economical in consumption and give a high output of light with the elimination of glare and shadow.

The Report reviews a number of types of noise, both continuous and sporadic, which are encountered in different departments of industry. The most striking feature is the amazing tolerance of the workers. In weaving sheds, for example, the operators can talk quite easily where a casual visitor can hardly speak above the din.

Operators practically never complain of noise; complaints all come from residents in the neighbourhood. The Industrial Health Research Board has studied the effect of noise on efficiency and accidents and has detected a slight and persistent increase in output when ear protectors were provided. It seems reasonable to expect that a sudden noise might precipitate a mishap but there is no clear case on record. The only accident in which noise played a part was that of a man who went to oil a squeaking machine, contrary to rules, because he was irritated by it. The Department feels that the problem of the reduction of noise is, in the main, one for the designers of buildings. Individual firms have, however, tackled the problem with a good deal of success by lining departments with sound-absorbing felt or asbestos, walled between boarding, and by replacing old mechanisms by modern ones. Ear defenders were much appreciated by workers in a nail-making factory and by men testing aircraft engines; in other places their reception was mixed.

SAFETY IN INDUSTRY

The total number of accidents reported during 1934 showed an increase on those of 1933, no doubt largely reflecting the general increase in industry. The chief inspector fears that an increase in accidents must long remain the price to be paid for prosperity.

There were 785 deaths and 136,858 injuries. Transmission machinery accounted for 1,143 accidents, 38 of which were fatal; and defective belt shifting accounted for a number of serious accidents through machines suddenly starting when the workers did not expect it. Similar accidents were attributable to human carelessness. Fire, although not uncommon in industrial premises, did not cause much loss of life or injury, though one distressing outbreak caused the death of two boys in the celluloid store of an electric accumulator factory.

An improvement in trade conditions has been accompanied by a revival of interest in accident prevention. There is a tendency to abolish the safety committee and appoint a safety officer instead, but this practice is not

regarded favourably by the Department. It is considered better to encourage the workers to take a keen personal interest in their own safety than to lead them to think that the employers regard safety as a matter for the management. Reports from various parts of the country are sometimes encouraging and sometimes unsatisfactory. One interesting innovation is that, in a certain works, carefully selected workmen have been appointed as "safety associates" for a period of three months. During that time their duty is to bring to the attention of the safety committee any dangers or risks which might otherwise escape notice. They will be replaced periodically by others. In another works a class of boys has been organised for instruction in safety principles and first-aid. The high accident-rate among young workers is specially mentioned by the Chief Inspector, who urges the importance of educating not only new entrants but also schoolchildren. In a large gas works every accident is investigated by a jury of twelve workers. A chemical works in Wales succeeded in winning outright (having won it five times) a fine safety trophy competed for by a group of eight works, six in America and two in this country. Their record was 609,000 man-hours without a single lost-time accident from Dec. 13th, 1933, to Jan. 17th, 1935.

Trade conferences have continued to meet to discuss safety in their particular trades. An investigation showed the value of these conferences by revealing that 12 per cent. of the accidents in a particular district would not have occurred if the precautions recommended by the trade conference of that industry had been carried out.

HEALTH IN INDUSTRY

Many attempts have been made to devise a system in which sickness-rates in industry can be recorded, and the health of industrial workers compared with that of the rest of the population. No satisfactory method has ever been discovered. In the opinion of Dr. J. C. Bridge, senior medical inspector, most ill-health in industry arises outside the factory. He thinks medical supervision is of the greatest value in assessing the gravity of minor sickness, since the boredom associated with repetitive work is likely to increase the significance attached to such sickness by the worker, and thus to increase the length of his absence from work. Medical supervision has also much value in counteracting the effect of irresponsible sickness certificates such as "gastritis due to employment." The effect on the health of the worker of the allegation that his illness is due to his work may be very grave. It would be much better if practitioners who suspect such a possibility would communicate with the Factory Department, in order that the diagnosis be made only after full investigation.

Experiments have been made in a few factories towards reducing the hours of heavy manual work, but there has been a regrettable tendency to employ workers under the age of 18 to the full limit of the legal hours. The reduction in cases of lead poisoning has not been maintained, chiefly because of the increase in the building of houses and an influx into the industry of untrained persons. Several steps have been taken to ensure the observance of the Pottery Regulations. There were only nine cases of aniline poisoning, the lowest since the disease became reportable. There were three fatal cases of benzene poisoning which is of interest in connexion with the study of aplastic anæmia. The extended use of chromium plating has been accompanied by an increase of chrome ulceration, and the industry does not seem to appreciate the value of frequent medical examination. Regular medical supervision seems to have a definite relationship also to the percentage of deaths from industrial skin cancer, which particularly affects cotton workers and gas workers. There have been no new cases of cancer of the nasal sinuses, to which attention was drawn in previous reports, but two further deaths have occurred among the cases previously reported. There is a suggestion that the condition may be associated with cancer of the lung, and the firm is doing its best to suppress all dust. The appearance of hand-made bricks and tiles has caught the fancy of the public, and there is a demand for them; they can be imitated cheaply by machinery which involves a process of sand-dusting. This exposes the worker to siliceous dust and will, in the opinion of Dr. Bridge, result in an increase of silicosis if precautions are not taken. The number of cases of dermatitis have very greatly increased, but this does not necessarily imply that the number of persons infected has increased in proportion. The causal agency is often obscure, and there is a tendency to ascribe any skin condition to the employment unless it is well recognised as a non-industrial type. A susceptibility test does not seem to be practicable, and the industries have to fall back on protection and care of the skin.

FIRST-AID AND FACTORY WELFARE

Most of the larger factories have good first-aid facilities but in the smaller factories the conditions are not good and in many cases the supply of dressings is inadequate. In one division no less than 30 prosecutions were taken against factory occupiers for failure to provide or maintain first-aid boxes. Carron oil is still supplied in first-aid boxes and is often used in preference to a burn dressing or other suitable preparation. The report suggests that local chemists might be circularised and informed of the type of dressing which will conform to the regulations.

There is some difficulty in getting workers to report slight cuts and scratches, and in one division three inquests were held on deaths from sepsis after minor injuries. Dr. Bridge, commenting on the attacks that have recently been made at inquests on the use of iodine for wounds, finds it difficult to understand why such a useful preparation should be held responsible for the fatal issue, as it was in one case of punctured wound, seeing that it is most difficult to render a punctured wound aseptic.

There is a rapidly extending improvement in the production of voluntary welfare amenities: comfortable chairs, small tables, pleasant colour schemes, and good messrooms. In a number of instances the appointment of women supervisors has entirely changed the atmosphere of the works. Internal discord, lack of discipline, and minor irregularities have been known to disappear completely on the appointment of a woman welfare worker or nurse. In other respects the personal factor is being considered more and more; for example in one factory a worker who has a relative undergoing an operation in hospital or seriously ill leaves his name and number at the office when clocking in. At intervals the office clerk telephones the hospital and keeps the worker informed of the patient's progress. In many places systematic efforts are made to trace symptoms of discontent to their origin and to remedy grievances. Several firms have realised the wastefulness of selecting entrants by putting a notice in the window, or applying to an employment exchange. One firm discovered that it had to engage 1000 people to select 200 suitable for their work, and are now thankful for the services of a trained psychologist. A large hosiery firm has experimented with prism lenses for employees engaged in linking fine-gauge hosiery.

The four women who tried the glasses for six weeks were so enthusiastic that every linker immediately asked for them, and now the supply of prism lenses has been extended

to all the workers. The firm undertook to pay the oculists if National Health Insurance benefit was not available, and qualified opticians supplied the glasses at contract prices. Special consideration was given by the oculist and optician to the distance at which each linker worked, so that the glasses were suited to the individual. All the linkers who were examined by the oculist were found to have a refraction error, and in all but one case there was imbalance of the muscles. The amount of bad work is said to be greatly reduced.

The report closes with a short chapter on the Home Office Industrial Museum, which has attracted a considerable number of visitors, though as yet too few from among actual factory workers. Many examples have been furnished of the practical effects of a visit to the Museum, to which an extension is to be opened in the autumn.

OXFORD OPHTHALMOLOGICAL CONGRESS

THIS congress was held in the Department of Human Anatomy, Oxford, on July 4th, 5th, and 6th. At the opening session the retiring Master, Mr. CYRIL WALKER gracefully installed his successor Mr. RUSS WOOD, who then called upon Sir HAROLD GILLIES to read his address on

PLASTIC SURGERY OF THE EYELIDS AND CONJUNCTIVAL SAC

Sir Harold pointed out that in plastic surgery a successful result was dependent on a correct diagnosis, particularly with regard to the amount of skin requiring replacement. This was often very much more than appeared at first sight, especially in cases of cicatricial ectropion. The best results were obtained with skin from one of the other eyelids, and failing this, from the back of the ear. If after operation the graft were found to be too pale it could be given a natural colour by tattooing. Another important general principle was to excise all scar tissue; this applied with particular force to cases of contracted sockets. Sir Harold showed many lantern slides of patients and a cinema film illustrating the general principles of plastic surgery. He also showed a series of 25 patients who had been the subject of plastic operations with remarkably fine results.

PAPERS AND DISCUSSIONS

In the afternoon, Mr. TUDOR THOMAS gave a description of *The Technique of Corneal Transplantation*. The operation was described in detail. Stress was laid on the importance of having a healthy donor cornea, of preparing the graft, and the hole in the recipient cornea. Mr. Tudor Thomas pointed out that the steps in the operation had been elaborated by experimental work on animals, and this work had been particularly valuable in ascertaining the best means of securing the graft in position. From the results obtained in 15 suitable cases, it appeared that material improvement could be expected from this operation in 75 per cent. of cases with opaque cornea, where the eye was otherwise healthy.

This paper was followed by a discussion on the *Results of Treatment in Rettinal Detachment*. Mr. R. AFFLECK GREEVES said he had treated 70 cases by Larssen's method of diathermy combined with trephining of the sclera and puncture of the choroid by a Nettleship's dilator. In 36 cases there was complete reposition of the retina with some improvement of visual acuity. Prognosis was found to depend mainly on the length of time the detachment had existed, the size and number of holes and the height of the intraocular pressure. The degree of myopia and the condition of the vitreous were not important factors. It was suggested that a hole never developed behind the equator of the eye, and that the so-called holes at the macula did not involve all the thickness of the retina. Aphakic cases gave poor results, only one out of five being successful.

On Friday morning, Colonel H. H. SMITH spoke to his paper on *the Generation, Circulation, and Function of the Aqueous and their bearing on Cataract and Glaucoma* which had previously been circulated. He rejected the theory that the aqueous is a dialysate and suggested that it was secreted by the ciliary epithelium, drawing an analogy between these cells and those of the renal tubules. He also emphasised the importance of the pump mechanism of the scleral spur in bringing about drainage of the aqueous.

Mr. W. S. INMAN then read a paper on *Emotional Factors in the Causation of Diseases of the Eye*. He gave many instances of eye diseases whose inception and course were influenced by some psychological upset though he had to invoke unconscious mechanisms to show the processes involved. Among his cases were some of acute glaucoma, ocular hæmorrhage, keratitis, irido-cyclitis, styes, and tarsal cysts. A lively discussion ensued.

In the afternoon, Dr. EJLER HOLM, of Copenhagen, described a case of *Bilateral Cyclitis with Transverse Calcareous Band* occurring in a girl of 15 with typical Still's disease. The eye trouble had begun at the age of 5. The association of iridocyclitis with Still's disease is apparently rare, because the lecturer had been able to discover only one other case in the literature though there were several examples of iridocyclitis associated with polyarthritis in children.

Mr. FREDERICK RIDLEY read a paper on the *Permeability of the Cornea*. This is a subject which has not been investigated lately, largely because Leber in 1873 showed that it required a pressure of 200 mm. Hg to force water through a piece of excised cornea. Recent work shows however that the cornea acts as a semipermeable membrane, the permeability being greatest over the region of Schlemm's canal. This is because Descemet's membrane is relatively impermeable. If the cornea be in contact with blood-serum, its permeability is increased by 50 per cent.

Mr. BERNARD CHAVASSE read an interesting paper on *Tests for Retinal Correspondence* and showed some ingenious instruments and slides he had devised for this purpose. Retinal correspondence, he said, is best investigated by the production of after images, which are different in the two eyes. He also suggested a valuable method of estimating stereoscopic vision, based on the principles laid down by Snellen for the measurement of visual acuity.

The afternoon session ended with a paper by Mr. ARNOLD SORSBY on *Skeletal Changes in some Congenital Eye Lesions*. These are commoner than is thought, and Mr. Sorsby urged his hearers to submit their patients with congenital eye lesions to a full general examination. He gave as examples of osseous deformities syndactyly, associated with aniridia; arachnodactyly associated with subluxation of the lenses, and polydactyly with retinitis pigmentosa. The present classification of cranial deformities was in a chaotic condition and Mr. Sorsby attempted to reduce this chaos to some degree of order by showing the difference between various cases of so-called "oxycephaly." He suggested that the use of this term should be restricted to cases with certain definite characteristics.

On Saturday morning Dr. BERNARD SAMUELS, of New York, read a paper on the *Recessus Hyaloideus Capsularis*. This is a space bounded posteriorly by the hyaloid membrane of the vitreous, anteriorly by the posterior capsule of the lens, and medially by Egger's line. Its size varies considerably and it can be examined by the slit lamp. In health it contains fibres arising from the vitreous. In glaucoma and diabetes the space has been found to contain pigment globules; in cases of injury, red blood-cells; in cases of ureal sarcoma, tumour cells.

Dr. GEORGE YOUNG described a modification of his operation of *Double Sclerectomy in Glaucoma*. After the trephined discs have been removed from the sclera, a special type of needle threaded with two pieces of silk is passed through one trephine hole and out of the other. One end of each piece of silk is cut short and the other is left just protruding from the conjunctival wound. At the end of eight days, each piece of silk is drawn out about 3 mm. and eight days later, they are removed entirely. The use of this seton obviates the need for massage of the globe after operation.

The last paper of the congress was read by Dr. D. V. GIRI on *Tebeprotin Therapy in Diseases of the Eye*. Tebeprotin, he said, was used with favourable results in disease of the eye as far back as 1922. It is a chemically pure protein derived from the human tubercle bacillus and the dosage can be exactly determined. It acts probably in a non-specific manner and is often of service in eye conditions which are not tuberculous. Dr. Giri gave an account of five cases in whom he had employed this remedy with satisfactory results. The injections were made subcutaneously below the clavicle, but he intends later to try subconjunctival injections, in view of the striking results obtained by Ilona Krasso.

DOYNE MEMORIAL LECTURE

This lecture was given by Mr. MALCOLM HEPBURN on June 5th. After a tribute to the founder of the congress, he went on to discuss the general principles governing the movement of pigment. He mentioned that apart from retinal moles and congenital pigmentation of the retina, pigmentary deposits were very rare in primary retinal diseases, whereas in disease of the choroid the pigment was always disturbed. This disturbance might be late in its occurrence, and in some cases might not be visible with the ophthalmoscope, even though subsequent histological examination proved its existence. Although differences in detail gave rise to a large variety of ophthalmoscopic pictures, the underlying pathology of many apparently diverse fundus conditions was the same. In spite of this, however, some kind of classification was essential and the lecturer suggested that the following five categories would include all choroidal disease: (1) inflammatory, (2) vascular, (3) colobomatous, (4) hyaline degenerative, (5) traumatic. The variations in the vision and visual fields in each type of case were discussed and their implications commented upon.

CONCLUSION

No account of the Oxford Ophthalmological Congress would be complete if allusion were made only to scientific communications. Nearly all the members are accommodated in Keble College, and live an undergraduate type of life for three days, having meals together in hall and meeting afterwards in the junior common room. A vast amount of shop is talked, and the information gathered is often of great value; moreover members have an opportunity of getting to know each other in a way that would be impossible were they all living in different hotels. There is a pleasant informality about the whole congress which makes it the finest busman's holiday that any ophthalmic surgeon could take.

The annual dinner was held on July 4th at Keble College. The Master alluded in his speech to the loss the congress had sustained through the death of Prof. Arthur Thomson, who had been its firm supporter since 1910. It was entirely owing to his kindness that the anatomical department of the university had been made available for the holding of these meetings.

The arrangements this year were, as usual, most efficient; the display by various firms in the commercial exhibition was much appreciated.

PUBLIC HEALTH

Special Schools or Special Classes?

THE conference of the National Special Schools Union, held recently in Edinburgh, provided an exceptionally attractive programme. One of its more interesting discussions centred round a controversy which, although old, has been recently revived—namely, what are the relative merits of special schools and special classes in the training of the mentally defective? It soon became obvious that there was very little support of the latter alternative in the conference, its only defenders being two speakers from Leicester, where an interesting experiment is in progress in the education of retarded children in single classes. But as these children are not officially certified as defective, the classes are not technically "special" classes. It is true that Prof. Drever, the professor of psychology in Edinburgh University, who was described on the programme as presenting the case for special classes, did in the early part of his address speak of the present system of special schools as "wrong and quite indefensible," but it soon emerged that his real objections were not to special schools as such, but to the medical certification of mental defect which is still necessary for educational purposes and to the inclusion in special schools of children of low grade. The present school provides chiefly for children with intelligence quotient ranging from 50 to 70 approximately. His plea was for schools to educate children with quotient between 60 and 80. His proposals were therefore essentially those of the Wood Report of 1929, and he seemed to carry the sympathy of his audience very largely with him.

The question is largely one of population. Any area with a school population over 8000 should be able to maintain a special school. Below that level special classes in ordinary schools are the only possibility, but there are also areas where even a special class is an impossibility and where, therefore, the defective child has to be dealt with as a unit of an ordinary class. One county authority has a travelling inspector who periodically sees these children and gives advice on their individual tuition. Granted the necessary population, however, there is no question that the advantage educationally is with the special school which admits of a grading of the children and a consequent limitation of the range of capacity in any one class which is unattainable in a special class. The child has the further advantage, which was emphasised by Mr. Kennedy Fraser, the psychologist to the

Glasgow education authority, of a change of teacher from time to time, while the teacher, instead of being an isolated unit working with colleagues ignorant of and often unsympathetic with the difficulties of teaching "special" children, has the opportunity of sharing the experience of other teachers and discussing the problems raised by the individual children. If it be contended, on the other hand, that the special class gives the child the opportunity to mix with normal pupils and does not emphasise his segregation as the special school does, it can be replied in the words of Mr. Kennedy Fraser that defective children are "not too dull not to be acutely aware of their deficiencies when brought into contact with these normal children," deficiencies which make them often objects for the derision of their fellows and sometimes even of their teachers. In an ordinary school the subnormal child can be made to feel that he has possibilities of achievement.

If special schools encounter discredit in any area, it is most usually because children of too low a grade of defect are admitted who are, therefore, not strictly educable. The remedy for this, of course, is a raising of the standard of admission and the abolition of certification of defect so as to include larger sections of retarded children than is now legal. This would incidentally, by increasing the numbers of children who might be included, have the effect of justifying authorities in the establishment of "retarded schools" in areas where special schools are, under the present conditions, impossible. As Prof. Drever said, "the use of the term 'mentally defective' was an initial mistake" and too often has resulted in futile attempts to educate children really ineducable though perhaps trainable to a limited degree in respect of habits and simple tasks. Apart from official definitions of grades of deficiency, we have to distinguish those who are (1) ineducable and untrainable, (2) ineducable but trainable, (3) educable. The first two classes should not be under the care of education authorities. What is required is more concentration upon the educable and particularly the high-grade educable child who can undoubtedly, with suitable training—general and occupational—be socialised. The day special schools in particular have given ample proof of this possibility. The standard of admission naturally varies greatly in different areas, but there is probably on the whole better control of selection in the management of day special schools than of residential schools which tend too often to attract to themselves low-grade cases, and high-grades only when they present behaviour problems. It was admitted by one of the speakers at the Conference that about a third of the children now admitted fail to justify the hopes of their teachers. There must inevitably be children on the border line who should be admitted for varying periods on probation, but a raising of the standard of children selected would undoubtedly be of advantage in so far as it would permit the admission of high-grade children whom medical officers hesitate to certify but who obviously require some form of special education.

In striking contrast to Prof. Drever's utterance was that of a speaker at another session who, in support of the theory that juvenile delinquency is due mainly to mental defect, envisaged an extension of this term to include children up to an I.Q. of 90. His failure to give due weight to emotional factors in the causation of delinquency was criticised by other speakers and his use of the term defect received no support. Let the term defective be reserved for those obviously or proved by trial to be social misfits and its use as a necessary preliminary to education be abandoned.

Water-supplies National and Local

This year's presidential address to the Society of Chemical Industry was devoted to national water supplies—a subject that comes well within the purview of the Society since water is a chemical compound supplied in greater amount and in higher purity (seldom less than 99·95 per cent.) than any other. Mr. Edwin Thompson made it clear that there has been no national water policy in the past; indeed he may be said to have shown that as yet we are only beginning to obtain data which may some day allow a national policy to be settled. The flow of the Thames has been gauged with some precision for about forty years, but the flow of most of our rivers is merely a matter of surmise, although the rainfall from which that flow is derived is well studied.

Mr. Thompson is not a believer in the possibility of the "water grid" and he quoted Mr. R. G. Hetherington as pointing out that an electric main costing a certain sum will supply over 36 times the population which a water main costing the same amount would supply, even assuming gravitational propulsion.

He raised another question—the softness of water—which was discussed rather more fully by Dr. Ernest Suckling and Mr. Philip Porteous in a paper read before the recent annual meeting of the British Waterworks Association. Suckling and Porteous set forth the reasons which led the Cambridge Water Company to soften their water from 18 down to 8 degrees of hardness and to do this by a base exchange process rather than by lime. It is interesting to know that the less cost of base exchange was a determining factor. In his part of the paper Dr. Suckling considered "the possibility of the desire and demand for soft water to become a craze or fashion not altogether to be commended"—a possibility which the president of the Society of Chemical Industry also had in mind. Whilst agreeing that there is an absolute necessity for a regular intake of calcium in the diet for normal development and the preservation of health he said there had been little medical support for the view that deficiency of calcium in water is responsible for dental defects and rickets. He holds that the advantages of water softening fully justify the cost.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED JUNE 29TH, 1935

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 1; scarlet fever, 1563; diphtheria, 904; enteric fever, 62; acute pneumonia (primary or influenzal), 521; puerperal fever, 44; puerperal pyrexia, 121; cerebro-spinal fever, 14; acute poliomyelitis, 4; acute polio-encephalitis, 1; encephalitis lethargica, 7; relapsing fever, 1; dysentery, 5; and ophthalmia neonatorum, 122. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on July 2nd was 2753, which included: Scarlet fever, 811; diphtheria, 1000; measles, 43; whooping-cough, 377; puerperal fever, 24 mothers (plus 5 babies); encephalitis lethargica, 270; poliomyelitis, 2. At St. Margaret's Hospital there were 21 babies (plus 11 mothers) with ophthalmia neonatorum.

Deaths.—In 121 great towns, including London there were no deaths from small-pox, 3 (0) from enteric, 19 (1) from measles, 4 (0) from scarlet fever, 17 (6) from whooping-cough, 17 (4) from diphtheria, 41 (8) from diarrhœa and enteritis under two years,

(*Continued at foot of opposite page*)

CORRESPONDENCE

THE FUTURE OF PHARMACY

To the Editor of THE LANCET

SIR,—In his presidential address to the British Pharmaceutical Conference, on which you commented last week, Dr. F. W. Crossley-Holland deplored the falling-off in the business of the pharmacist so far as the compounding of "drugs and galenicals" is concerned and urged his hearers to turn their attention to laboratory diagnosis. "It would," he said, "be of the greatest assistance to the doctor if he could depend upon the pharmacist to undertake the examination" of pathological specimens.

May I be permitted to question this statement? Its truth depends upon two assumptions: firstly, that the facilities for the examinations referred to are not at present fully available to medical practitioners and, secondly, that pharmacists are suitable persons to undertake them. As to the first assumption Dr. Crossley-Holland ignores the fact that there are already throughout the country a large number of laboratories established for the purpose of doing the work which he proposes should be taken over by pharmacists, the services of which are generally available to medical practitioners caring to make use of them. The majority of these laboratories are attached to voluntary hospitals and are in charge of medically qualified men and women who have made a special study of laboratory diagnosis. I believe that there is no district in England, Wales, or Scotland in which the services of such a laboratory are not available to the general practitioner.

Dr. Crossley-Holland's second assumption is that laboratory diagnosis may properly be undertaken by persons not possessing a medical training. He points out with truth that pharmacists have acquaintance with the methods of the laboratory bench; to make from this the transition to the assumption that in virtue of this familiarity the pharmacist is fitted to play the part of laboratory diagnostician is a very perfect non sequitur. It implies an implicit faith in laboratory methods as such, held by few who practise them. Most workers in diagnostic laboratories have at one time or another been embarrassed by being regarded as the priests of a peculiar ju-ju which in return for a suitable offering of a piece of meat or a bottle of urine will make oracular utterance. The scientifically minded laboratory diagnostician recognises that the results of his investigations play a part, sometimes lesser, sometimes greater, but a part only, in building up the picture of the morbid process which constitutes diagnosis and determines treatment. To play his proper part it is essential that the laboratory diagnostician have wide acquaintance with the whole field of medicine and that he move freely therein. To aid in diagnosis he must have knowledge of what he proposes to diagnose; failing this he is but a blind guide.

So well is the importance of laboratory diagnosis now recognised that the University of London has lately established a Diploma in Clinical Pathology, which may serve as the hall-mark of those having particular knowledge of, and skill in, the methods of laboratory diagnosis; this diploma is obtainable only by medically qualified men and women having special experience of this class of work.

Many pharmacists have in the past proceeded to the study of medicine and have come to adorn the profession of their second choice. The same course is still open to pharmacists wishing to qualify themselves for a closer contact with medicine.

I am, Sir, yours faithfully,

S. C. DYKE,
Hon. Secretary, Association of Clinical Pathologists.

Wolverhampton, July 8th.

MEDICAL HERBALISTS

To the Editor of THE LANCET

SIR,—Members of Parliament receive every month a journal called "The Medical Herbalist," which is described as the organ of the "National Association of Medical Herbalists of Great Britain." A legal M.P. in a recent public speech declared that he read the "Medical Herbalist" regularly, and it is indeed in many respects funnier than Punch.

The National Association of Medical Herbalists (N.A.M.H. for short) appears to control the "College of Botanic Medicine" at 46, Bloomsbury-street, London (which is also the registered office of the journal), through a council which appoints an "education committee," of which four "principals" (none medically qualified) are named in the Medical Herbalist of July, 1935, as giving instruction in "anatomy and physiology, materia medica and therapeutics, pathology and physical diagnosis, diseases of women and children, chemistry," and there is a further system of postal tuition in these subjects, forming part of the course leading to the issue of "Qualifications" to practice. Inspection of the calendar reveals that the College grant two "qualifications," both of which are called, sometimes "degrees," sometimes "diplomas," the users of these titles being apparently unaware that there is any difference between them. The "right" to practise "botanic medicine" is obtained by passing an oral examination founded on a curriculum which occupies three sessions of three months each, concurrently with a postal tuition course. The curriculum includes 32 separate subjects, and it is stated that there is a course of 12 lectures in each subject. Besides the subjects named above as being the responsibility of the "principals," bacteriology, general medicine, general surgery, gynæcology and obstetrics, pediatrics, orthopædics, urology, dermatology, otorhino-laryngology, ophthalmology, radiology and electricity, venereal diseases and infectious diseases are named as part of the course. Upon passing the examinations in this curriculum at the end of the third term, the "degree of L.C.B.M." is awarded, and immediately after this examination another oral test on the subject matter of the postal tuition course is held, upon passing which the "degree of M.N.A.M.H." is given. The two together are called the "conjoint degree," qualifying for practice. The fee for the whole course is 25 guineas, payable in advance, and a further fee of 5 guineas is payable on

(*Continued from opposite page*)

and 29 (4) from influenza. The figures in parentheses are those for London itself.

Birmingham reported 5 of the fatal cases of diphtheria, 4 of those from diarrhœa and enteritis, and 3 of those from measles. There were also 4 deaths from diarrhœa and enteritis in Manchester, and 3 in Hull.

The number of stillbirths notified during the week was 258 (corresponding to a rate of 38 per 1000 total births), including 44 in London.

registration, whereupon the happy herbalist is "entitled to use the letters L.C.B.M. and M.N.A.M.H." after his name. After the lapse of a year the holder of the "conjoint degree" may be awarded the "higher degree of D.B.M. (Doctor of Botanic Medicine)," on presentation of a thesis of not less than 5,000 words, and the payment of a fee of 25 guineas.

In the Medical Herbalist of February, 1935, the announcement was made that, relying upon a "Royal Charter" given to Herbalists in the reign of Henry VIII (34 and 35, Henry VIII, c. 8), which it was stated is still upon the Statute Book, the Council of the N.A.M.H. have resolved henceforth to give the degree of "M.D." replacing the previous "D.B.M." It is only fair to say that in the March number of the Medical Herbalist a protest was made by a correspondent who pointed out "the risk of prosecution" because of this "imitation" of medical degrees, but no notice apparently was taken of this protest.

There are only two authorities in London who have legal sanction to confer degrees in medicine, the Archbishop of Canterbury (this privilege is now obsolete) and the University of London. Upon the publication of the resolution cited above I consulted the Vice-Chancellor of London University and ascertained that, although the claim to which I drew his attention was obviously absurd, the University could not take action to prevent the imitation of its titles. If and when, however, any person actually uses the title of M.D. on the authority of the "degree" given by the "College of Botanic Medicine" it is probable that a prosecution could be undertaken—e.g., by the Medical Defence Union, for infringement of the Medical Acts.

The history of the statute thus exploited by the N.A.M.H. is interesting. It has never been repealed, but as the statute made no provision (and no provision exists) prescribing who shall exercise the privileges named in the statute it has remained essentially inoperative.

The first attempt to regulate medical practice in in England was made by the Act 3, Henry VIII, by which no person was allowed to practice as a physician or surgeon within the City of London or a radius of seven miles from it without examination or approval by the Bishop of London, outside that area by the Bishop of the diocese concerned. That statute has never been repealed, but is superseded by later legislation. The Act 34 and 35, Henry VIII, was apparently passed to allow certain persons "to minister medicines" without having the licence from the Bishops provided for by the earlier statute. Judicial interpretations of 34 and 35, Henry VIII, provide limitations severely restricting its scope. Thus it has been laid down that its effect is that it "does not extend either in words or intent or meaning to give liberty to any person to practise or exercise for gain or profit." The parties licensed by that statute are "such persons as shall be good honest people, as old women and such as are inclined to give their neighbours physic through charity and piety," and the diseases in which "potions" are thus admissible were limited to three: "stone, strangury and ague."

These limitations are of course not indicated in the claim put forward by the Council of the N.A.M.H. that the Act 34 and 35, Henry VIII, legalises the indiscriminate practice of herbal medicine in this country. How dangerous that practice has become may be gauged by the Coronér's inquests in which herbalists have been concerned.

I am, Sir, yours faithfully,

House of Commons, July 8th. E. GRAHAM LITTLE.

AGGLUTINATION OF VIRUS BODIES

To the Editor of THE LANCET

SIR,—Prof. J. G. Ledingham's letter in your last issue makes it clear that he himself in his paper in 1931 recognised the priority of Paschen in the matter of the agglutination of the elementary bodies of vaccinia by specific serum. Had he pursued his researches more meticulously and written to our common friend Prof. Paschen for further details he would have found that Paschen's first observation was actually made in 1911, two years before the published paper to which Prof. Ledingham refers. The expression therefore "not very profound or critical" that Prof. Ledingham is kind enough to apply to my references applies even more appropriately in this instance to his own.

The real point at issue between Prof. Ledingham and myself is the question as to the relative merits of the macroscopic and microscopic methods of detecting the specific flocculation of a virus. Now, Sir, the first observation of the specific flocculation of vaccinia virus was made neither by Paschen nor by Ledingham, but by Tanaka in Japan as long ago as 1902, and curiously enough Paschen himself in his paper in the *Deutsch. med. Woch.* of 1913 referred to by Prof. Ledingham seems to have missed this paper, which was published in the *Centralblatt f. Bakteriol.*, Abt. 1, 1902, Orig., xxxii., 726. The following notice of this observation is taken from my special report "Studies of the Viruses of Vaccinia and Variola" (M.R.C. Special Reports No. 98, 1925, p. 15).

"The first observation that a suspension of vaccine lymph undergoes flocculation when brought in contact with immune serum was published in 1902 by Tanaka, who in the course of an epidemic of small-pox in Japan found that fluid from a serous effusion in a small-pox patient when left in contact with a suspension of vaccine lymph for several days at 37° C. produced a coagulation phenomenon akin to the Pfeiffer-Gruber-Widal reaction. Control observations with normal serum, and hydrocele and ascites fluids when mixed with vaccine lymph in the same way, proved negative. This observation was confirmed in 1904 by Freyer (*Centralbl. f. Bakteriol.*, Abt. 1, 1904, Orig., xxxvi., 272), who found that the serum of a well-immunised calf or rabbit as well as that of a vaccinated man produced flocculation of a suspension of calf lymph."

It was this observation of Freyer that Paschen refers to as preceding his own in the paper published in 1913. The occurrence of the flocculation reaction in question, however, was contradicted by v. Pirquet in a paper published in the *Wien. klin. Woch.*, 1906, xix., 1407, and his prestige and authority were so great that further progress in the practical application of the reaction for recognising cases of small-pox was delayed until publication in 1925 of the M.R.C. Report referred to above and the later work of Burgess, Tulloch, and Craigie. As stated before, the flocculation was shown by Craigie to depend upon two factors; an agglutination of the E.Bs, and a precipitation of their soluble products.

With regard to the microscopical procedure employed, first by Paschen and eighteen to twenty years later by Ledingham, in which the elementary bodies were shown to be agglutinated, while the method has undoubtedly the merit that the purified virus agent can be observed, as Ledingham and Eagles were the first definitely to prove, the procedure is by no means free of criticism. First of all, as Paschen pointed out, it is liable to be complicated by the simultaneous presence of a precipitin reaction; secondly, it involves the use of that museum-piece

the hanging drop chamber; and thirdly it means a long and tedious wait of 48 hours or even longer during which the hanging drop may dry up, or in warm weather such as we have recently been experiencing moulds, &c., may get in. The whole tendency in the application of specific serological methods of diagnosis in practical medicine to-day consists in the employment of macroscopic methods, which save both time and labour, and have the further conspicuous merit that the absorption test can be used as well to check results. Moreover, the microscopic agglutination of elementary bodies is at present badly in need of further control observations.

I am, Sir, yours faithfully,

M. H. GORDON.

St. Bartholomew's Hospital, E.C., July 7th.

STERILITY AND PSYCHONEUROSES FOLLOWING LUMBAR SYMPATHECTOMY

To the Editor of THE LANCET

SIR,—My attention has been drawn by Dr. Levy Simpson to the erroneous conclusions which might be drawn from my paper on this subject which you published on April 6th. Investigations into the after-results of some hundreds of operations performed at the Mayo Clinic and by Prof. J. R. Learmonth and Prof. E. D. Telford have shown that lumbar sympathectomy or ganglionectomy, unilateral or bilateral, is never followed by any sexual difficulty. On the other hand, Prof. Learmonth tells me that in his experience presacral and inferior mesenteric neurectomy in the male is invariably followed by loss of ejaculatory power and consequent sterility, though not by impotence; the fibres concerned in this loss traverse the presacral nerve. Presumably the latter operation was performed in the two cases referred to in my paper.

I am, Sir, yours faithfully,

ARTHUR F. HURST.

New Lodge Clinic, Windsor Forest, July 5th.

CLEFT PALATE

To the Editor of THE LANCET

SIR,—I think I can best answer Mr. Wardill's letter by quoting two passages from his own pen. In his letter in your last issue he writes: "The whole object of the procedures advocated by myself has been that of restoration of function, and this can only be attained by operation based on sound anatomical and physiological principles. The proof of success lies not in the appearance of the suture line or in the apparent mobility of the palate, but in the ability of the patient to open and close the nasopharyngeal valve." Yet his paper in the *British Journal of Surgery* (October, 1933) contains the following sentences: "Among my greatest disillusionments in cleft-palate surgery was the case of a young woman . . . upon whom the operation of pharyngoplasty with repair of the palate was performed. The operation resulted in a perfect palatopharyngeal mechanism which complied with all the tests, and for many weeks I spent much time in correcting her bad habits, until in the end she was sound perfect. At this time she was engaged to be married, and, marriage ultimately taking place, I did not see her till some months after, when happening to meet her in the street, I was amazed to find that she had become one of the worst cleft-palate speakers I had ever heard."

It has been stated many times that a patient regarded as a surgical success is a functional failure, and even Mr. Wardill admits this. The converse is also true. Surely, then, some form of speech training is essential. There are many recorded cases of a functionally perfect result following such training "in spite of" surgery.

Having read much of the extensive literature that has grown up around the surgery of cleft palate, and having tried several means of closure of the cleft, I now use Veau's technique which I have modified slightly. Veau's operations are described in detail in his book, which however is written in French. I have published an (admittedly inadequate) account of Veau's technique taken from this source in THE LANCET (1933, i., 515). I am, Sir, yours faithfully,

Harley-street, W., July 6th. DAVID LEVI.

GOLD TREATMENT OF TUBERCULOSIS

To the Editor of THE LANCET

SIR,—Your last issue contains the results of a statistical inquiry into the results of gold therapy in pulmonary tuberculosis by Dr. B. A. Peters and Dr. C. Short of Bristol. So sweeping is the generalisation inherent in their conclusions, and so great its clinical significance if it is correct, that it warrants a close examination of the evidence upon which it is founded.

In the first paragraph of their paper Drs. Peters and Short say, in regard to the assessment of the therapeutic value of any particular agent in pulmonary tuberculosis, "If any method of selection is used an imponderable error is introduced." Later they state that "during the past three years those not treated with gold have been slight cases or cases with pleural effusion . . . or moribund cases." Thus, by their own admission they must have employed *some* selection, thereby introducing an "imponderable error"! That this selection was capable of introducing a very significant "error of sampling" is shown by a scrutiny of Table III.: in the 1930–34 experience, only 171 out of a total of 492 (35 per cent.), and in the 1932–34 experience, 147 out of 299 cases (49 per cent.), were treated by gold: further, a simple subtraction sum shows that in the years 1930–31 only 24 of 193 cases (13 per cent.) received gold.

With the statement "during the past three years those not treated with gold have been slight cases or cases with pleural effusion in whom the prognosis was very favourable without special treatment, or moribund cases," let us couple "the tuberculosis officer who is responsible for allocating cases to our institution informs us that the cases sent to us have been chosen on the same basis during the whole ten years—another institution receiving the majority of the earlier cases." It follows that the above-mentioned "slight cases or cases with pleural effusion" form a relatively insignificant fraction of the cases untreated by gold—i.e., 65 per cent. in the first and 51 per cent. in the second observation period. This conclusion surely stultifies the major premise of the theorem that "an improvement in the results of a five years' working should be evident if gold were of any value," because the gross preponderance of "moribund" cases in the total experience can only falsify the statistical issue.

When one seeks to determine exactly *what* type of case was treated with gold, the only answer appears to be that they were neither very early cases nor moribund ones: between these two extremes lies a host of possible permutations and combinations of clinico-pathological variables, and the criteria upon which the authors decided to exhibit gold in any given case remain shrouded in obscurity. In particular, no mention is made of radiological examination which so often compels the assessment

as an advanced case of what clinically is a mild or moderately severe one. So again, by a lack of clarity in description of their material, the authors expose themselves to a possible statistical error.

The assessment of the value of a therapeutic method, whether statistically or otherwise, necessarily connotes that the method has been employed in accordance with the canons of its correct usage as laid down by past and current clinical and experimental research. Contemporary opinion in regard to gold therapy for pulmonary tuberculosis has it that at least 5 g. in all should be administered, and, for certain experimentally established facts, by the intravenous route. Drs. Peters and Short say their cases ". . . have had gold in the form of Crysalbine, Allochrysine, or Myocrysine in the usual weekly doses of 0·1–0·5 g. for six to eight weeks, followed in many by a repeat course after an interval of six weeks." Thus it seems that the efficiency of gold therapy in their hands can be indicted upon the grounds that the preparations used by them were administered by the *intramuscular* route, and more, that the total dosage was an inadequate one; for we are not told exactly how many cases had a "repeat" course.

To summarise:—The sweeping generalisation, sorrowfully made by Drs. Peter and Short, that gold in the therapy of pulmonary tuberculosis is quite valueless, has for its foundations very important errors of sampling, a lack of definition of selective criteria, and a misuse of the therapeutic agent. Their conclusion contrasts strangely with that of a carefully controlled statistical study such as Stub-Christensen's (Tubercle, 1931, xiii., 49).

I am, Sir, yours faithfully,

Queen Anne-street, W., July 8th. CEDRIC SHAW.

DUODENAL EXTRACT IN DIABETES MELLITUS

To the Editor of THE LANCET

SIR,—Your annotation of July 6th under this title omits reference to a paper by my old chief, Prof. J. Hill Abram, in THE LANCET (1906, i., 220) on "The Acid Extract of the Duodenal Mucous Membrane as a remedy in Diabetes Mellitus." He dealt fully with the problem in this and two subsequent papers published in 1906 in the *Biochemical Journal* in collaboration with Prof. Benjamin Moore (who first suggested the use of duodenal mucosa) and E. S. Edie. Their reasoning was:—

"If, for the purpose of argument, we take it that the duodenum does yield a chemical excitant for the internal secretion of the pancreas, and that in the absence of the internal secretion glycosuria results, then there are three places in the chain at which weakness due to functional or other disarrangement may occur and lead to a breakdown and the appearance of diabetic conditions. First, the breakdown may occur at the duodenum, on account of the non-secretion of the excitant; secondly, the breakdown may take place at the pancreas, so that although the excitant is formed at the duodenum and carried to the pancreas, yet these cells are not capable of excitation, either from complete morbid change or from some functional alteration in their metabolism; and thirdly, there is the possibility that even when the duodenum is normal and supplying its excitant, and although the pancreas is also normal and yielding, as a result of the action of the excitant, its internal secretion, yet there are changes in the oxidising tissues such as the liver or muscles which prevent the oxidising function of these from coming into operation.

"It is clear that it is only in the first class of case that benefit might be expected to follow in a diabetic from administration of extracts of duodenum, even granting that the experimental difficulties of administration had been so overcome that the active material entered the circulation and reached the pancreas as if it had naturally been formed in the patient's duodenum.

"Accordingly, it is scarcely to be expected that in all cases administration of extracts of duodenal mucous membrane will cure, or even benefit, diabetics, and to prove the existence of a specific chemical excitant for the internal secretion of the pancreas formed in the duodenum, it is only necessary to show in a fair percentage of cases that abolition of glycosuria follows administration of the extract of duodenal mucous membrane."

It is interesting to compare the first paragraph of the above with the following summarising paragraph in the paper which, thirty years later, is dealt with in your annotation:—

"The results suggest that three types of diabetes exist—e.g., (1) from lack of activation of the pancreatic islands by a duodenal factor, (2) from loss of Islands of Langerhans, and (3) an insensitiveness of the organism to insulin." (Duncan, Shumway, Williams, Fetter: Amer. Jour. Med. Science, March, 1935, p. 418).

I am, Sir, yours faithfully,

Liverpool, July 9th. HENRY COHEN.

SODIUM AND THE SUPRARENALS

To the Editor of THE LANCET

SIR,—The annotation on this subject in your last issue refers to a conclusion of Loeb and his colleagues that if adrenal insufficiency in man is not relieved by the administration of salt it will not be relieved by commercial cortical extracts in ordinary doses. This is contrary to my clinical experience and its acceptance would, I believe, cause unnecessary suffering. For the latter reason I write this brief note, although it is not my intention at the moment to discuss the therapeutic value and limitations of salt or sodium therapy.

I am, Sir, yours faithfully,

Harley-street, W., July 7th. S. LEVY SIMPSON.

IRISH MEDICAL ASSOCIATION.—The annual meeting of this association was held in Dublin on July 3rd. Dr. Robert J. Rowlette was re-elected president, and Dr. John P. Shanley was elected vice-president. The business of the meeting was divided into two sessions—one for scientific discussions and one for the ordinary business of the association. The scientific session was held in the forenoon, and there were two discussions—the first on immunisation against diphtheria, and the second on puerperal sepsis. The discussion on immunisation was opened by Dr. J. P. Shanley, and communications were also made by Dr. C. J. McSweeney, medical superintendent of Cork Street Fever Hospital, Dublin, and by Dr. J. C. Saunders, medical officer of health for the city of Cork. The discussion on puerperal sepsis was opened by Dr. Bethel Solomons, and communications by Dr. Gibbon FitzGibbon, Dr. N. McI. Falkiner, and Dr. John McGrath were read. Both discussions were highly practical and were greatly appreciated by the members present. In the evening the members of the association and their guests dined together at the Dolphin Hotel. Among the principal guests were the Lord Mayor of Dublin, the Attorney-General of the Irish Free State, the president of the Royal College of Physicians of Ireland, the president of the Royal College of Surgeons in Ireland, and the governor of the Apothecaries' Hall.

Arrangements made for amalgamation with the British Medical Association's Irish branches are described on p. 90.

OBITUARY

THOMAS McCRAE, M.D., D.Sc. Toronto, F.R.C.P. Lond.

PROFESSOR OF MEDICINE, JEFFERSON MEDICAL COLLEGE, PHILADELPHIA

AFTER an illness lasting more than a year death released Thomas McCrae from increasing disability in spite of which he had courageously carried on his teaching. Coming of an old Galloway fighting stock he was born on Dec. 16th, 1870, at Guelph, Ontario, as the eldest son of Lieut.-Col. David McCrae and his wife Janet Eckford. His brother John was the pathologist, physician, and poet who wrote "In Flanders Fields" and died on active service in January, 1918, a few days after he had been appointed consultant physician to the Imperial Forces overseas. The two brothers were educated medically at Toronto University and went as post-graduates to work under Osler at the Johns Hopkins Hospital. After this their careers diverged; John returned to Canada and at McGill University taught first pathology with J. G. Adami and later clinical medicine. Thomas remained at the Johns Hopkins Hospital and as resident, instructor in medicine and in charge of the clinical laboratory, resident physician, and associate professor of medicine became a most successful clinical teacher. Like W. S. Thayer he was very closely associated with Osler, his chief, often travelling with him and helping and collaborating in medical publications; for example in "Cancer of the Stomach: A Clinical Study" (1900), in "Modern Medicine" (1907) which was a system of medicine (at first in seven, later in six volumes) running into a second and third edition (1913, 1925), and in the later editions of Osler's well-known text-book.

Often in this country in the summer with his chief, before the latter came to Oxford as Regius professor of medicine, and later with Mrs. McCrae, he became M.R.C.P. in 1901 and was elected F.R.C.P. in 1907. As a bachelor he lived for some years in the same house in Baltimore as W. H. Welch; in 1908 he married Amy Gwyn, a niece of Sir William Osler, and in 1912 he left Baltimore to become professor of medicine at the Jefferson Medical College, Philadelphia, in succession to Prof. J. C. Wilson who survives him. During the European war he was for a time Lieut.-Colonel C.A.M.C. and head of the medical service of a Canadian War General Hospital. Well known on both sides of the Atlantic for his writings and with many personal friends he took an active part in American medicine, being secretary (1917–26) and president (1930) of the Association of American Physicians which corresponds to the later established Association of Physicians of Great Britain and Ireland, of which he was, with Lewellys Barker, elected a foreign honorary member last year. At the Royal College of Physicians of London he gave the Lumleian lectures in 1924, taking as his subject the clinical features of foreign bodies in the bronchi (THE LANCET, 1924, i., 735, 787, 838), on which his experience with his colleague Chevalier Jackson made him an exceptional authority. In 1927 he received the honorary degree of D.Sc. from Toronto, his own University

With a fine presence McCrae radiated good nature and inspired immediate confidence. The sympathy of his numerous friends will go out to his childless widow.

HENRY JOHNSTONE CAMPBELL, M.D., F.R.C.P. Lond.

THE death occurred on July 4th, in Dartmouth Cottage Hospital, of Dr. H. J. Campbell, late consulting physician to the Bradford Royal Infirmary and professor of forensic medicine at the University of Leeds.

Henry Campbell, the third son of Peter Campbell of Brackley, was born in London in 1859 and educated at University College School, proceeding to Guy's Hospital for his medical education. He qualified with the English double diploma in 1887 and graduated as M.B. London in 1889 with first-class honours in forensic medicine. At Guy's Hospital he made a mark in the school, being senior demonstrator of physiology and lecturer on elementary biology in the school, while he was also a Hunterian professor of physiology at the Royal College of Surgeons of England. He was elected assistant physician to the East London Hospital for Children in 1891, and held the post for four years, during the last two of which he was also assistant physician to the City of London Hospital for Diseases of the Chest. In 1895 he went to Bradford on his election as physician to the Bradford Royal Infirmary and now became a prominent figure in the educational life of the Victoria University as lecturer in forensic medicine and toxicology at the Yorkshire College. He was elected F.R.C.P. Lond. in 1898, and on the institution of the University of Leeds was appointed professor of therapeutics and pharmacology in the university, while his other posts included those of consulting physician to the Victoria Hospital, Keighley, to the Bingley Hospital, and to the Bradford Eye and Ear Hospital. Dr. Campbell made important contributions to medical literature. Early in his career he wrote useful records in the Guy's Hospital Reports and a work on elementary biology. He edited the English translation of Hertwigs "Cell," and published clinical papers in the *Quarterly Journal of Medicine*, the *British Medical Journal*, and the *Edinburgh Medical Journal* over a large range of subjects.

During the war Dr. Campbell was physician to the Bradford War Hospital and at the conclusion of hostilities retired to Dartmouth. Here he took a great interest in municipal affairs, was elected to the Devon County Council, made J.P. for the county, and was mayor of Dartmouth for six years. He served on many important committees of the county council, was chairman of the Governors of Dartmouth Grammar School, and a member, generally as president, of many local bodies concerned in the maintenance of health and the promotion of sport.

FLORENCE STACEY-CLEMINSON, M.B., B.S. Lond., J.P.

THE death occurred on June 30th of Dr. Stacey-Cleminson, well known as a medical practitioner and public worker in Hull.

Florence Stacey, a New Zealander, studied medicine at the London School of Medicine for Women, and graduated as M.B., B.S. London in 1909. She held appointments at the Royal Free Hospital and in 1911 was appointed house surgeon to the Victoria Hospital for Children, Hull, and from that time forward spent her professional life in Hull. She soon gained a place on the honorary staff of the hospital, and practised in partnership with another doctor, Dr. Mary Charlotte Murdoch, at that time also on the staff of the Victoria Hospital. On the death of Miss Murdoch, Dr. Stacey married Mr. Cleminson and shortly afterwards discontinued private practice, though her services were often in request as a consultant. She now devoted herself to public work of which she had considerable experience as a

prominent person in the organisation of the National Council for Women. She was appointed a justice of the peace and served on the panel of justices to the juvenile court where her special training made her services of particular value. She was a member of the health and public service committee of the Hull corporation and touched the social side of the city at many points, making her mark on the life of Hull.

GEORGE CHARLES PEACHEY, L.R.C.P., L.R.C.S. Edin.

THE death occurred on Sunday last, July 7th, of Dr. George Peachey who made a considerable mark as a medical journalist and historian. Peachey, who was descended from a long line of doctors, was born in Calcutta in 1862, the son of Thomas Peachey, I.C.S. He received his general education at Taunton school and proceeded thence to St. George's Hospital and the University of Edinburgh, where he qualified with the Scottish double diploma in 1887. At first in general practice in Berkshire, he held various appointments, among others that of medical officer and public vaccinator to the Wantage Union, but his inclinations led him to return to London and take up literary work in connexion with medicine. He contributed to various magazines biographical sketches of famous men of science, was the author of a short life of Sir William Savory, and he undertook the writing of the history of St. George's Hospital with the support of Clinton Dent, then senior surgeon to the hospital. After Dent's death the work was not completed in accordance with the original design. He was a British delegate to various historical congresses in Rome and Budapest, and was for a long time associated with the conduct of the *Medical Press and Circular* where much of his historical or antiquarian writing appeared. He was a member of the Society of Genealogists, for pedigree rather than heredity interested him; and he was British delegate on more than one occasion at historical congresses. The direction of his work led him to become familiar with the developments of medical organisation over a long if modern period, and he described the origin of voluntary hospitals as we now understand them in the *Hospital*. In 1928 Peachey delivered the Thomas Vicary Lecture at the Royal College of Surgeons of England. The lecture entitled "The Homes of the Hunters" was published in THE LANCET (THE LANCET, Feb. 18th, 1928, p. 360), and was as much concerned with William Hunter as with his better known brother, John. With its full illustrations and sound reflections on the careers of the famous brothers the essay revealed Peachey as a man of real literary talent.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Overcrowding in Scotland

IN the House of Commons on July 3rd Mr. SKELTON, Under-Secretary of State for Scotland, moved the third reading of the Housing (Scotland) Bill. He said that overcrowding in Scotland was a serious danger and difficulty. The powers and the finance which this Bill gave to the local authorities armed them satisfactorily to deal with the problem as it had never been dealt with before. The Bill would achieve a double result: low wage earners, or those with limited financial means, would be given an opportunity of being rehoused at rents which they could afford to pay; and that those whose means would enable them to take houses at an economic rent would not be subsidised by their fellow citizens. The provisions even with regard to those areas would ensure that the central sites of the bigger cities were used and not allowed to degenerate. One cause of misunderstanding in regard to the Bill was removed by the undertaking given by the Secretary of State for Scotland on the second reading and the alteration made in Committee to deal with the fears of those who thought that the object of one of the clauses was to force the owners of existing property to adopt forthwith a new standard. Another misunderstanding was that the Bill would result in the indiscriminate slaughter of existing housing accommodation. Where a survey showed that existing houses were suitable for replacement for occupational purposes this fact would be borne in mind in relation to the housing programme. There was a superfluity in Scotland of one- and two-roomed houses, the former unsuitable for a family, though the two-roomed house might well be suitable to a newly married couple, and even a couple with one child. But many two-roomed houses in Scotland dated back to the middle years of the nineteenth century, built in vast rookeries with lighting, air space and passage space entirely out of date. Some of these would undoubtedly go. There were, however, two-roomed houses built shortly before the war with proper modern amenities, and he did not believe that these ran any risk.

Mr. N. MACLEAN said that they needed a completely new set of circumstances, and the sooner they got them the better for the health of the people of Scotland. It was not merely an overcrowding question but a health question, and he wanted to see the features embodied in this Bill extended in a more generous manner, the machinery simplified, and the methods to be adopted by the local authorities handled in a different way. The Government departments should see to it that the local authorities attended to their duties under the housing legislation; some had been remiss in the past. The Labour Party hoped that there would be, in this Bill or in a later measure, additional powers given to the department to sweep out of existence the great curses of single apartment and room and kitchen houses that had been so much to the detriment of the health of the people of Scotland.

Sir ARCHIBALD SINCLAIR supported the Bill on behalf of the Liberal Party.

Sir IAN MACPHERSON said that the problem of overcrowding did not exist in the same way in the rural districts as it did in the towns. The problem in the rural areas was not so much overcrowding as the habitability of the houses. What they wanted in the Highlands was a small subsidy to recondition houses. In some of the burghs of the North of Scotland they could find individual houses as bad as any of the slums in the great cities.

After further debate,

The Bill was read the third time and passed.

Prison Administration in Scotland: Medical Officers' Duties

The House of Commons on July 4th went into Committee of Supply on the Civil Estimates.

On a vote for salaries and expenses of the Prisons Department in Scotland,

Sir G. COLLINS, Secretary of State for Scotland, said that his attention had been drawn to the inspection of bedding in prisons. All the regulations were to be completely reviewed in the light of modern thought and modern outlook. The Department were securing a site near Carstairs for a modern criminal lunatic building and when that building was erected

there would be a big transfer of criminal lunatics from Perth Prison to Carstairs.

Mr. N. MACLEAN said in the Report of the Prisons Department they found that certain prisoners were certified under the Mental Deficiency and Lunacy (Scotland) Act, 1913, during 1934. The number included quite a number of youths as well as men. There was one case in which he was interested of a lad of 17 years of age who was sentenced in April, 1934, to 60 days' imprisonment and was transferred to Stoneyetts Certified Institution on May 17th in terms of an order by the Secretary of State under Section 10 of the Act to which he had referred. This lad might perhaps lack intelligence, but he was by no means mentally defective. He was treated in one of the special schools in Glasgow. To the best of his (Mr. Maclean's) knowledge the lad was still at Stoneyetts Certified Institution. He had tried to get this lad released but had failed to do so. He had several cases which bore some resemblance to this case, and he entertained grave feelings about what was likely to happen if the Secretary of State obtained the further powers for which he was asking in the Criminal Lunatic Bill.

Mr. LEONARD said that prisoners on their reception into prison had to wait in a detention cell for a medical examination and that the period between their reception and the medical examination was sometimes an hour or two hours, and that the conditions under which the prisoner was in that cell were anything but comfortable. He also wished to raise the question of the medical inspection of prisoners. He had received from the Secretary of State in reply to a question a list of the duties of medical officers and Rule 225 (8) stated:

"A medical officer shall see every prisoner at least once a week, so as to ascertain his general state of health, physical and mental, and whether he is clean in his person and free from disease, and if his clothing and bedding are sufficient, and shall record the results of his inspection in the journal."

That rule was quite explicit, easily understood and commendable, but he was informed that these things could not be done by any medical officer if the practice that held good in Barlinnie Prison was adopted in prisons elsewhere. He was informed that this weekly inspection was somewhat in the nature of a single-file parade past the medical officer and if that was the case it was totally inadequate and no medical officer irrespective of his ability was capable of attending to the details in the rule by such a cursory survey of the people under his charge.

After further debate,

Sir G. COLLINS, Secretary of State for Scotland, said that the points Mr. Leonard had raised would be examined. The practical administration of Barlinnie and other prisons would be scrutinised. In regard to the case referred to by Mr. Maclean it was undoubtedly true, and he (Sir G. Collins) regretted it, that intimation of the removal of this young lad was not sent to the relatives by the prison governor, and steps had been taken to see that such a thing would never occur again. During the last few months he had made thorough inquiries to see whether the lad could be released, but his present information was that it would not be in his interests to release him. He would, however, consult an outside doctor untrammelled by departmental influence in the matter.

Mr. MACLEAN said this case had been mismanaged from the commencement by the authorities. Might he ask that the medical man or men whom the right hon. gentleman intended to ask to examine this case should do so away from the environment of Stoneyetts Certified Institution; that they should be asked to certify the lad free from the surroundings of a lunatic asylum?

Sir G. COLLINS: I will have inquiries made, but I must not be taken as agreeing that the inquiry shall be outside a particular place.

Mr. MACLEAN: Will it not be prejudiced if the examination is made in the mental institution?

Sir G. COLLINS: Everything will be done above board to inquire whether this youth should be retained where he is.

After further discussion the debate on the vote was adjourned.

In the House of Commons on Monday, July 8th, the University of Durham Bill, which has already passed through the House of Lords, was read a second time. The money resolution in connexion with the Bill was agreed to in Committee.

The money resolution in connexion with the Criminal Lunatics (Scotland) Bill was also agreed to in Committee.

National Health Insurance Bill

In the House of Commons on July 8th the National Health Insurance and Contributory Pensions Bill was considered in Committee.

Mr. TINKER moved to omit the provision in paragraph (4) of Clause I. that a person should not be entitled to maternity benefit during an extended insurance period unless and until, having again become employed within the meaning of the Bill, he had been so employed for at least 26 contributory weeks in a period of not more than four consecutive contributory half years and had paid 26 contributions. The cash benefit in maternity cases was especially important, because it was required at the time when there was most need in the house.

Sir KINGSLEY WOOD (Minister of Health) said that in addition to the provisions of maternity benefit under the National Health Insurance Act local authorities provided facilities in their hospitals and homes in connexion with schemes of maternity and child welfare. Most women who took advantage of those facilities made payment for them. It was difficult to extend the cash payment in respect of maternity without so extending sickness and disablement benefit for men as well as women. Unless the financial scheme of the Bill were wholly recast it would not be possible for such payments to be made. He had no doubt that a number of the approved societies would not be able to make the payments.

After further debate,

Sir KINGSLEY WOOD said that he would, however, look into the matter again.

The amendment was withdrawn.

Mr. RHYS DAVIES moved the following new Clause: "Every assignment of or charge on, and every agreement to assign or charge, any remuneration payable to a medical practitioner in respect of the administration of medical benefit shall be void, and, on the the bankruptcy of any medical practitioner entitled to such remuneration, the remuneration shall not pass to any trustee or other person acting on behalf of his creditors." The purpose of the new Clause was to expose some anomalies which had crept into panel practices in some parts of the country. The position, briefly, was this: A medical student, when qualified, might be poor when starting his career. To buy a practice he must have money. He believed that in some cases the young doctor got so involved in the hands of money-lenders that the fact led to his practice suffering. He believed that within the medical profession arrangements existed whereby young doctors were helped in starting their careers, but he was not referring to that angle of the case. The position was stated in a definite and official form in the Report of the Annual Conference of the Association of Insurance Committees. He was not criticising the young doctor who borrowed money, but he wanted to lay it down definitely that money should not be lent under such conditions for its repayment as would harass the doctor to the detriment of his private or panel practice. It was not suggested that such cases were common.

Mr. SHAKESPEARE (Parliamentary Secretary to the Ministry of Health) said that there was no evidence,

except in an infinitesimal number of cases, that the efficiency of the panel practitioner was being affected by the fact that he used the security of his practice to advance himself in his career. It would be putting too great a disability on a young panel practitioner to prevent him from doing this. The real safeguard was that it was a matter for the British Medical Association to see that the panel practitioner was not made the prey of unscrupulous people. More and more reputable insurance societies were making provision to enable practitioners to borrow on reasonable terms. The Ministry would watch the position in consultation with the British Medical Association to see that the panel practitioner was not disadvantaged by mortgaging his security.

The new Clause was withdrawn.

The Bill passed through Committee and was reported to the House.

HOUSE OF COMMONS

MONDAY, JULY 8th

Destruction of Locusts and Malarial Mosquitoes

Mr. McENTEE asked the Secretary of State for the Colonies whether any experiments by spraying from the air for the destruction of locusts or malarial mosquitoes had been carried out in any area controlled by his department; and, if so, were the experiments considered to be successful.—Mr. MALCOLM MACDONALD replied: Certain experiments against locusts were carried out last year by the Government of Northern Rhodesia. These showed that it is possible to destroy locusts in flights by spraying them with finely divided poison dust from aircraft. The report on these investigations was considered by the Third International Locust Conference, in September last, which recommended that further work should be carried out with a view to developing these methods of locust control. I am not aware of any experiments in the destruction of malarial mosquitoes by similar methods in any of the Dependencies.

WEDNESDAY, JULY 3RD

Maternal Mortality in Ceylon

Mr. THOMAS WILLIAMS asked the Secretary of State for the Colonies what was the maternal mortality-rate in Ceylon for the latest year for which figures were available; and how many deaths were involved.—Mr. MALCOLM MACDONALD replied: The maternal mortality rate in Ceylon for 1933 was 18·6 per 1000. The number of maternal deaths involved was 3832.

Mr. WILLIAMS: Is the right hon. gentleman aware that this constitutes the highest maternal mortality figure of any civilised country in the world, and can he say what steps the Government are taking to deal with the matter?

Mr. MACDONALD: The figures represent a considerable decrease on what they have been, and in recent years there has been a steady improvement. The Government are taking various steps to meet the situation.

Mr. WILLIAMS: Is the right hon. gentleman not aware that the 18 per 1000 births compares very badly with the 4 per 1000 births in this country, and that there is very real room for improvement?

Mr. MACDONALD: The fact that there has been a steady improvement in recent years shows that we are aware of the problem and that we are doing everything we can to solve it.

Unemployment Regulations and Meals for School-children

Mr. CLEARY asked the Minister of Labour whether he was aware that in the city of Liverpool the Unemployment Assistance Board was making deductions in respect of meals given to necessitous school-children; and, if he could say under what regulation of the Board this was done, and whether he would have this practice stopped, in view of the fact that the Board of Education, by making grants towards the cost, was encouraging the granting of such meals, particularly in industrial areas, in order to enable children to benefit from the education afforded in the schools.—Lt.-Col. MUIRHEAD, Parliamentary Secretary to the Ministry of Labour, replied: I am informed that the Board's practice in the treatment of school meals is as set out in the Appendix to the Memorandum on the Unemployment Assistance Regulations 1934, presented to Parliament in January last (Cmd. 4791). As indicated there, the Board entirely ignores all meals given upon a doctor's certificate that a child is suffering from a specific pathological condition and also all those consisting of milk and other special forms of provision. Moreover, other meals are only taken into account where they exceed twelve a week, and the adjustment made in the allowance is based on a moderate estimate of the saving to the household, approximately one penny per meal. The Board inform me that they are keeping a close watch on the working of these arrangements.

Mr. CLEARY: Will the meals in question granted to the necessitous school-children come under the exemptions mentioned by the hon. gentleman in his reply?

Lt.-Col. MUIRHEAD: I cannot answer that question without notice.

Mr. CLEARY: Is it within the knowledge of the hon. gentleman that deductions of the character mentioned are being made in Liverpool?

Lieut.-Col. MUIRHEAD: I understand that that is so. It is being done in accordance with the instructions issued last January.

Mr. CLEARY: In view of the fact, that the Board of Education make a grant of 50 per cent. towards the cost of these meals, and by recent circular are endeavouring to encourage very definitely their provision in industrial areas, is the hon. gentleman aware that the action of the Unemployment Assistance Board is militating against the policy of the Board of Education?

Lieut.-Col. MUIRHEAD: I can only say that the Board are acting under the powers granted to them by this House.

Mr. G. GRIFFITHS: If the public assistance committee give these meals without taking them into account what authority have these other people to take them into account, because there is a standstill order?

No answer was given.

Local Authorities without Superannuation Schemes

Mr. TOM SMITH asked the Minister of Health, the number of the local authorities that had not put superannuation schemes into operation.—Sir KINGSLEY WOOD replied: The authorities who have not adopted the Act of 1922, or who have no schemes under local Acts are (apart from Parish Councils and a number of miscellaneous authorities) County Councils, 12; County Borough Councils, 16; Borough Councils, 132; Metropolitan Borough Councils, 2; Urban District Councils, 349; and Rural District Councils, 251.

State Grants for Medical Research

Captain FULLER asked the Minister of Health, what bodies or persons were receiving grants for medical research from public funds; and whether any notable results had been obtained in the last 10 years.—Mr. DUFF COOPER, Financial Secretary to the Treasury replied: As regards the first part of the questions, I would refer my hon. friend to an answer which I gave on July 9th last. The provision for a grant to the Medical Research Council in the current year is £165,000. As regards the second part of the question, I fear it is impossible within the limits of a Parliamentary reply to do justice to the advance of medical science in the last ten years and to the part which state-aided bodies and persons have taken in that advance. I can only refer him on the subject generally to the Annual Reports of the Medical Research Council.

Pregnant Woman and Prison Sentence

Mr. McGOVERN asked the Secretary of State for Scotland, whether he was prepared to release Mrs. Kelly who was an expectant mother and due to give birth to a child in 5 weeks' time and was sentenced to six months' imprisonment for alleged perjury in the Garngad Rioting Case.—Sir GODFREY COLLINS replied: A medical report which I have obtained and examined shows that Mrs. Kelly's confinement is not expected until about the end

of September and that she is well, in good general health and doing light work in the prison, and as stated in my reply to the hon. Member yesterday she will be removed to a hospital outside the prison for her confinement. The doctor will keep her under particular care and she will receive special medical attention. In no case can I find that pregnancy by itself has been regarded as a reason for release from prison. Having given further consideration to this case I regret that I can find no special circumstances which would justify me in recommending the release of Mrs. Kelly from prison at the present time.

Meals for Necessitous Unemployed Juveniles

Mr. TINKER asked the Minister of Labour, if he had considered the resolution passed by the Association of Education Committees calling upon the Government to introduce legislation to enable local education authorities, if they so desired to provide mid-day meals for necessitous unemployed juveniles attending approved full-time courses of instruction, and empowering the Ministry of Labour to bear the whole or part of the cost of providing such meals; and what reply he intended to give.—Mr. E. BROWN replied: I am not satisfied that a case has been made out for introducing the legislation necessary to enable local education authorities to provide meals at junior instruction centres, but I can assure the hon. member that the position is being, and will continue to be carefully watched.

Mr. TINKER: Will the right hon. gentleman make inquiries in the various localities and ask the authorities to send him cases in which it is felt that it is necessary that something should be done?

Mr. BROWN: That has been done. If the hon. member will consider the report of the National Advisory Council for Juvenile Employment in England and Wales, which is composed of representatives of the Association of Education Authorities, the National Confederation of Employer's Organisations, the Trade Union Congress General Council, the teachers organisations and the juvenile advisory committees, he will find that that report dated Jan. 20th, 1934, unanimously recommended against this course.

Mr. TINKER said that as he was not satisfied with the reply he would call attention to this matter at the earliest opportunity.

TUESDAY, JULY 9TH

Puerperal Fever Serum in L.C.C. Hospitals

Mr. GROVES asked the Minister of Health whether serum for puerperal fever was used, or had been used, in the hospitals under the administration of the London County Council.—Sir KINGSLEY WOOD replied: I understand that serum for puerperal fever has been used in one of the hospitals referred to, but that its use has now been discontinued.

MEDICAL NEWS

Royal College of Surgeons of England

Election to the Council.—On July 4th three fellows were elected into the council to fill the vacancies caused by the retirement of Sir Cuthbert Wallace, Mr. Leonard Gamgee, and Mr. L. R. Braithwaite. The result of the poll was as follows:—

	Votes.	Plumpers.
Leonard Ralph Braithwaite (Leeds) ..	838	 33
Sir Cuthbert Sidney Wallace (St. Thomas's) ..	829	 40
Seymour Gilbert Barling (Birmingham) ..	709	 15
Ernest Cranmer Hughes (Guy's)	648	 68

In all 1187 fellows voted, including 208 fellows resident out of Great Britain and Northern Ireland; in addition eight votes were found to be invalid. Sir Cuthbert Wallace, Mr. Braithwaite, and Mr. Barling are all elected for the full period of eight years.

University of London

At recent examinations the following candidates were successful:—

D.M.R.E.

F. M. Abeles, P. A. Flood, Daniel Hugo, E. G. Lynch, Mahendra Mani, Stanley Nowell, and T. C. Wasson.

At University College the Schafer prize in physiology has been awarded to Dr. D. H. K. Lee and the Bayliss-Starling scholarship in physiology to Mr. R. A. Gregory.

University of Manchester

At recent examinations the following were successful:—

M.D.

By Thesis.—B. R. Bramwell, J. A. K. Brown, Eli Davis, E. M. Greaves, M. C. G. Israels,* Florence V. Stephen-Lewis, C. F. White,* and D. J. Williams.†

* With commendation. † Gold medal.

By Examination.—K. H. Jackson.

CH.M.

Branch I.—H. T. Simmonds.

FINAL EXAMINATION FOR M.B. AND CH.B.

John Charnley, Eleanor B. Clarke, Mary A. C. Cowell, T. F. Davey, Samuel Franks, E. H. Heilpern, K. H. Higson, R. E. Hirson, L. L. Husdan, J. I. A. Jamieson, T. S. B. Kelly, W. E. Kershaw, A. F. Mackay, R. L. Parish, J. N. Parker, G. R. Rhodes, Leslie Margaret Ross, Cyril Royle, H. L. Settle, Dennis Shute, Clifford Tetlow, Roland Thornley, H. J. Wade (with distinction in medicine), and Margaret I. Williams.

Part I.—Forensic Medicine and Hygiene and Preventive Medicine.—S. G. Abelson, Beryl A. Barlow, Muriel J. Brayshay, J. C. Brundret, P. J. Burke, J. H. B. Cantley, Caroline J. Chalmers, Violet Cohen, D. L. Cooke, G. D. Dawson, Benjamin Flacks, Jacob Goldman, David Halpern, Alan Hargreaves, B. P. R. Hartley, J. A. Herd, Isaac Hesford, James Hilton, C. B. Holland, V. T. Lees, John Meynell, Evaleen N. A. Milligan, Eleanor M. Mills, E. J. Mitchell, W. S. Parker, Benjamin Portnoy, D. A. Richmond, A. L. Robertshaw, E. N. Rowlands, Aboudi Shashoua, R. M. Shaw, Nina Shtetinin, H. B. Slater, A. M. L. Smith, F. W. Smith, Nathan Taylor, D. J. Walker, and E. P. Whitaker.

University of Sheffield

At recent examinations the following candidates were successful:—

M.D.

D. L. Brown and Hyman Finklestone-Sayliss.

FINAL EXAMINATION FOR M.B., CH.B.

Part II.—Charles Axinn (with second-class honours); and J. C. Jolly and Ronald Scott.

University of Birmingham

At a congregation on July 6th the following degrees were conferred:—

M.D.—P. C. P. Cloake.

M.D. (State Medicine).—Alfred Elliott.

Ch.M.—F. A. d'Abreu.

M.B., Ch.B.—J. L. Collis (first-class honours); J. C. Bishop, J. T. Corbett, G. L. Gale, Leopold Goldman, R. G. Record, R. A. Shove, and A. G. M. Wilson (second-class honours); F. L. Bland, M. I. Cookson, A. L. Deacon, E. G. Dommen, V. J. Downie, C. C. Houghton, H. B. Hunt, W. H. G. Jones, T. B. Kenderdine, G. B. Miller, J. S. Price, W. S. Rees, A. E. Roberts, Harry Taff, and B. W. Walford.

University of Liverpool

At recent examinations the following candidates were successful:—

M.D.

J. L. Clegg, Elinor M. Gelling, R. G. Gornall, Mary F. Lacey, J. E. S. Lloyd, G. A. C. Lynch, J. Polonsky, Kathleen E. Slaney, and E. S. Smith.

FINAL EXAMINATION FOR M.B., CH.B.

Second Class Honours.—A. C. Brewer, B. J. Green, and W. Parke.

Part B. (1924 *Regulations*).—F. Harrison, J. R. Jones, and E. G. Watson.

Part III. (1929 *Regulations*).—Agnes Y. Bowie, J. L. Brown, G. V. Craine, H. R. G. Davies, V. K. Drennan, S. G. Griffin, R. L. Hartley, Clarice Hughes, J. E. E. Hughes, Mary M. Hurst, G. E. Jones, E. W. Knowles, H. S. Lanceley, Ethna W. Little, Sheelah Little, G. B. Marsden, A. G. H. Menzies, J. G. Rogers, and A. R. Sibbald.

Part I.—A. M. Abrahams, O. G. Bark, S. Bender, W. E. G. Bradford, K. W. Cameron, L. H. Chandler, E. Claitman, R. I. Cohen, K. W. Evans, J. G. Fox, J. Gendle, T. C. Gray, A. S. Hall, Elsie O. Hughes, H. Hughes, R. R. Hughes, T. S. Jones, J. Kay, J. Lawson, A. T. Leggate, M. Libman, H. K. Lucas, C. McGibbon, G. B. Manning, R. Marcus, E. H. Moore, W. J. Patton, W. H. G. Patton, R. S. Riley, W. A. M. Robinson, J. P. G. Rogerson, P. J. Rooney, A. C. Smerdon, A. R. Unsworth, J. Wajnerowicz, N. Waldman, S. R. Warren, T. E. Whitby, Evelyn M. Williams, G. E. O. Williams, Margaret E. Williams, R. B. Wright, and H. Zalin.

Part II.—L. V. Arundel, S. Ball, O. G. Bark, D. Barton, A. B. Bateman, A. H. Baxter, J. C. Birchall, J. G. Bogle, P. S. Byrne, H. Cantor, Eileen Chrimes, Eunice M. Clapham, S. E. Cooke, F. W. Crook, J. B. David, R. E. A. Davies, F. C. Deller, T. M. Doran, Mabel M. Drummond, Beryl Edgecombe, E. W. Evans, Jennet Evans, A. Fairbairn, A. J. Gill, N. M. Hancox, R. P. Harbord, H. F. Harwood, L. Henry, G. E. Hesketh, A. B. Higginson, E. A. K. Hoppins, F. Lanceley, J. Leiper, H. R. W. Lunt, K. S. E. MacRae, F. T. Madge, J. V. Manning, G. D. Owen, Kathleen M. Pearson, M. N. Phillips, G. Platt,

A. Simpkin, A. Singer, W. S. Sutton, A. C. T. Vaughan, R. E. D. Wheeler, and T. E. Whitby.

D.P.H.

Part I.—Nancy L. Lewis, J. B. Mackie, and Patricia I. Unsworth.

Part II.—A. R. Arulpragasam, A. T. Jones, E. Somasekhar, and J. V. Walker.

D.M.R.E.

Part A.—D. Menzies.

Part B.—D. Menzies, F. O. Pilkington, R. G. Reid, E. Siung, and R. F. Wynroe.

D.T.H.

G. P. A. Amirtha Nayagam and H. R. Shone.

Royal Institution

The managers of the Royal Institution have elected Dr. Edward Mellanby, F.R.S., Secretary of the Medical Research Council, to be Fullerian professor of physiology in succession to Sir Grafton Elliot-Smith. It is expected that Prof. Mellanby will give his first course of lectures in the autumn.

British Postgraduate Medical School

The second refresher course for general practitioners will be held during the fortnight commencing July 15th, 1935. The plan of the course will be on the general lines of the first one, described in our columns last week. The outside specialists taking part in this course are as follows: Dr. C. W. Buckley (Chronic Arthritis); Dr. Geoffrey Evans (Essential Hypertension: Its Diagnosis and Treatment); Dr. A. F. Hurst (Disorders of the Colon); Dr. E. Mapother (Psychiatry in General Practice); Dr. J. L. Livingstone (Asthma); and Prof. L. J. Witts (Common Types of Anæmia: Their Diagnosis and Treatment). Similar courses will be held during the fortnights commencing Sept. 16th and Nov. 18th. Other students can be admitted at any time for a course of hospital practice for periods of six months. Further particulars can be obtained from the dean of the school, Ducane-road, Shepherds Bush, London, W.12.

Rockfeller Medical Fellowships

The Medical Research Council announce that on behalf of the Rockefeller Foundation of New York they have made the following awards of travelling fellowships for the academic year 1935–36:—

David Fyfe Anderson, M.D. Glasg., professor of midwifery and gynæcology, Anderson College of Medicine, Glasgow, and assistant obstetric surgeon, Royal Maternity and Women's Hospital, Glasgow.

Norman Rupert Barrett, M.Chir. Camb., demonstrator of anatomy and chief assistant to the surgical unit, St. Thomas's Hospital.

Alexander Colin Patton Campbell, M.B. Edin., clinical tutor in medicine, Royal Infirmary, Edinburgh; and assistant lecturer, department of pathology in the University of Edinburgh.

Douglas Harry Kedgwin Lee, M.B. Sydney, Sharpey scholar, department of physiology, University College, London.

John Eugene Anthony O'Connell, F.R.C.S. Eng., demonstrator in anatomy, St. Bartholomew's Hospital Medical School.

Robert Walmsley, M.B. Edin., assistant in anatomy, University of Edinburgh.

All the fellowships awarded this year are tenable in the United States. Dr. Lee has been appointed on modified conditions while receiving emoluments from another source.

West London Medico-Chirurgical Society

The fifty-third annual dinner of the society was held at the Trocadero Restaurant, London, on Wednesday, July 3rd, the president, Mr. Howard M. Stratford, in the chair. After the loyal toasts the president presented Mr. Hugh Cairns with the West London Triennial Gold Medal for his recent work in neurosurgery, who in thanking the president said that in thus honouring him they were honouring his colleagues in neurosurgery. The award showed that neurosurgery had taken a secure place in medicine, but the progress that had been made had not been achieved without great effort on the part of the surgeons, and such recognition was of the highest possible encouragement.

The toast of the president and the West London Medical Society was proposed by the Lord Chief Justice, who said that if it had not been for the members of the medical profession some present might not have been born, and some would not have survived. In speaking to the good work done by the society, he recalled that it was founded in 1882 by a surgeon named Keetley, for many years on the staff of the West London Hospital, of whom it had been said that although he was very deaf nothing ever escaped him. The objects of the society were to advance medical science, to help coöperation between the general practitioner and the hospital with its specialised services, to hold scientific meetings for the presentation of research work, to discuss clinical cases, and to recognise and honour those who distinguished themselves in medical science. Associated with the society was the Cavendish lecture which was the only oration delivered under the ægis of the society. In proposing the toast Lord Hewart coupled with it the name of the president, a distinguished Kensington practitioner whose war service was remarkable, for he received his commission on the first day of the war, served on four fronts up to 1918, was torpedoed and twice invalided before he came home "pavilioned in splendour and girded with praise." Mr. Stratford in reply, thanked the Lord Chief Justice for his kind references and said that the members of the society were proud of their body, which was composed of general practitioners and specialists; indeed, he thought that if they had not got the general practitioners they would not have got the consultants. Sir William Osler had said that attendance at medical societies kept a man's mind open, and the president thought that if medical men in London were to use the advantages of the various medical societies there would not be the same need for them to have special post-graduate study. The year of his office had been most successful, but while the enrolment of new members had been one of the largest they had had, he could have wished that there had been more general practitioners among them.

Dr. V. B. Green-Armytage proposed the toast of the guests and kindred societies, and Prof. A. M. Low replied. Mr. L. E. C. Norbury also acknowledged the hospitality of the West London Medical Society.

British Empire Cancer Campaign

Sir Holburt Waring, president of the Royal College of Surgeons, vice-chairman, presided at the fifty-fifth quarterly meeting of the grand council of the Campaign, held at 12, Grosvenor-crescent, London, on Monday last. The following grants were approved: £655 to Dr. Alan Greenwood, of Edinburgh, for the breeding of disease-free brown leghorn fowls; £500 to Mr. F. C. Pybus, of Newcastle, through the North of England Council of the Campaign, for salaries of assistants and laboratory expenses for one year, and £150 for the purchase of apparatus for Dr. Lumsden, working at the London Hospital. The finance committee and grand council also authorised the renewal of the appointment of two assistants to Dr. Lumsden at £500 and £450 per annum.

Lord Horder, the chairman of the scientific advisory committee, submitted a scheme for the coördination of clinical cancer research which had been occupying the attention of the committees of the Campaign for some time. Lord Horder informed grand council that the scheme, which envisages an organisation for coördinating on a scientific basis clinical cancer research, had now received the unanimous support of all the teaching hospitals in London, the medical committee of the L.C.C. as well as a number of specialised hospitals in the metropolitan area. Grand council gave authority for carrying into effect the proposals made, and a general committee is to be formed for this purpose consisting of the nominees of all the coördinating institutions, together with the following representatives of the Campaign: Lord Horder, Dr. R. G. Canti, Sir Charles Gordon-Watson, Mr. J. P. Lockhart-Mummery, Mr. Cecil Rowntree, Mr. Eric L. Pearce Gould, and Mr. W. H. Ogilvie. It was agreed that the scheme should be carried out in the London area in the first instance, but it was hoped that it would be extended to all parts of the country and to the Empire in due course as a result of the experience gained.

Mr. Cecil Rowntree, F.R.C.S., one of the two British representatives and a vice-president of the "Union Internationale contre le cancer" reported to grand council that a general assembly was held on May 4th in Paris, attended by 43 delegates representing 34 countries, and that the international committee had made preliminary arrangements for the convening of an international conference on cancer in Brussels in September, 1936.

It was announced that the annual general meeting of the Campaign will be held on Nov. 25th.

Appointments

DAVIDSON, MAURICE, M.D. Oxon., F.R.C.P. Lond., has been appointed Hon. Consulting Physician to the Papworth Village Settlement, Cambridge.

Vacancies

For further information refer to the advertisement columns

Ashton-under-Lyne District Infirmary.—H.S. At rate of £150.
Association of Surgeons of Great Britain and Ireland, 65, Portland-place, W.—Surgical Scholarship. £350.
Barrow-in-Furness County Borough.—M.O.H., &c. £900.
Belfast, Joint Nursing and Midwives' Council, Northern Ireland.—Medical Examiners.
Belfast, Royal Maternity Hospital.—Res. M.O. At rate of £52.
Birmingham Children's Hospital.—Res. Surg. O. £175. Also H.P., H.S., and Cas. H.S. Each at rate of £75.
Birmingham, Dudley-road Hospital.—Jun. M.O. At rate of £200.
Birmingham, Little Bromwich Hospital for Infectious Diseases.—Sen. Asst. M.O. £750.
Birmingham, West Heath Sanatorium.—Res. Asst. M.O. At rate of £250.
Bolton, Royal Infirmary.—H.S. £125.
Bradford Royal Infirmary.—H.S. At rate of £135.
British Postgraduate Medical School, Shepherd's Bush.—Anæsthetist. Also 1st Asst. in Dept of Medicine. Each £300 Also 2 H.S.'s.
Cambridgeshire County Council.—Asst. County M.O. £500.
Cancer Hospital, Fulham-road, S.W.—Surgeon.
Canterbury, Kent and Canterbury Hospital.—2 H.S.'s. Each at rate of £125.
Cardiff, King Edward VII. Welsh National Memorial Association. Sen. Asst. Res. M.O. £350. Also Asst. Res. M.O. £200, for North Wales Sanatorium.
Chester, East Lancashire Tuberculosis Colony, Barrowmore Hall, Great Barrow.—H.P. At rate of £150.
Chester, Royal Infirmary.—H.P. also H.S. Each £150.
Chorley, Lancs, Chorley and District Hospital.—H.S. At rate of £150.
Colchester, Essex County Hospital.—H.P. Also Asst. H.S. £150 and £120 respectively.
Colonial Medical Service.—M.O.'s. Each £660.
Derbyshire Hospital for Sick Children.—Res. H.S. At rate of £130.
Devonport, Prince of Wales's Hospital.—H.P and Cas. O. At rate of £100.
Doncaster Royal Infirmary.—H.S. to Eye and Ear, Nose, and Throat Depts., Cas. H.S. Also H.S. Each £175.
Dreadnought Hospital, Greenwich, S.E.—H.S. At rate of £110.
Eastbourne, Princess Alice Hospital.—Res. H.S. £150.
Evelina Hospital for Sick Children, Southwark, S.E.—H.S. At rate of £120.
Exeter City.—Deputy M.O.H. and Asst. Tuber. O. £600.
Gloucestershire, Royal Infirmary.—2 H.S.'s Each at rate of £150.
Golden-square Throat, Nose, and Ear Hospital, W.—H.S. At rate of £100.
Great Yarmouth General Hospital.—H.S. £140.
Hampstead General and N.W. London Hospital, Haverstock Hill, N.W.—H.P. Also Cas. Surg. O. At rate of £100.
Harrogate Royal Bath Hospital.—Res. M.O. £156.
Hospital for Consumption and Dis. of Chest, Brompton, S.W.—Res. M.O. £350.
Hospital for Sick Children, Great Ormond Street, W.C.—Med. Reg. £300.
Hull Royal Infirmary.—H.P. for Sutton Branch Hospital. At rate of £160.
Huntingdon, Wyton Sanatorium.—H.P. At rate of £150.
Ilford Borough.—Asst. M.O.H. £600.
Ipswich, Mental Hospital.—H.P. £150.
Ipswich, East Suffolk and Ipswich Hospital.—H.P. and H.S. Each £120.
Iraq Government, Basrah Port Health Services.—M.O. 70 Dinars a month.
Jersey General Hospital and Poor Law Infirmary.—Asst. Res. M.O. At rate of £150.
King Edward Memorial Hospital, Ealing.—Jun. Res. M.O. At rate of £150.
King's College Hospital, S.E.—Registrar to Ear, Nose, and Throat Dept.
Kingston-upon-Hull, Beverley-road Institution.—Two Asst. M.O.'s. Each £350.
Lancaster Royal Infirmary.—Jun. H.S. At rate of £130.
Leigh Infirmary, Lancs.—Sen. Res. H.S. Also Jun. H.S. At rate of £175 and £150 respectively.
Lincoln County Hospital.—Jun. H.S. At rate of £150.
Liverpool, Bootle General Hospital.—H.P. Two H.S.'s. Also Cas. O. Each at rate of £150.
Liverpool, Hahnemann Hospital, Hope Street.—Res. M.O. At rate of £120.
Liverpool, Stanley Hospital.—H.P. and 3 H.S.'s. Each at rate of £100.
Llanelly and District Hospital.—Hon. Part-time Radiologist.
L.C.C.—Asst. M.O.'s. Each £470.
London Skin Hospital, Fitzroy-square, W.—Hon. Physician.
Macclesfield, General Infirmary.—2nd H.S. At rate of £150.
Manchester, Ancoats Hospital.—H.S. At rate of £100. Also Orthopædic H.S. At rate of £100.
Manchester, Crumpsall Hospital.—Two Res. Jun. Asst. M.O.'s. Each at rate of £200.
Manchester, Monsall Hospital for Infectious Diseases.—Jun. Res. Asst. M.O. At rate of £250.
Manchester Royal Infirmary.—Res. Cas. O. At rate of £150. Also Sen. H.S. for Central Branch, Roby-street. £150.
Manchester and Salford Hospital for Skin Diseases.—H.S. At rate of £150.
Montrose Royal Asylum.—Jun. Asst. M.O. £300.
Newcastle-upon-Tyne Hospital for Sick Children.—H.P. and H.S. Each at rate of £100.
Nottingham, Children's Hospital.—Res. H.S. At rate of £150.
Nottingham General Hospital.—H.S. for Ear, Nose, and Throat Dept. At rate of £150.
Nottinghamshire, C. C. Education Committee.—Asst. School M.O. £500.
Oldham, Boundary Park Municipal Hospital.—Res. Asst. M.O. At rate of £200.
Plymouth, Prince of Wales's Hospital, Greenbank Road.—Asst. H.S. At rate of £120.
Portsmouth City.—Tuber. O. and Sen. Asst. M.O.H. £750. Also Asst. M.O.H. and First Res. Med. Asst. £600–£750. Also Asst. M.O.H. and Second Res. Med. Asst. £500–£700.
Preston and County of Lancaster, Royal Infirmary.—H.S. for Special Depts. At rate of £150.
Queen Mary's Hospital for the East End, E.—Two Cas. and Out-Patient Officers, Each at rate of £150.
Queen's Hospital for Children, Hackney-road, E.—H.S. and Cas. O. Each at rate of £100.
Radium Beam Therapy Research, Radium Institute, 16, Riding House Street, W.—Asst. M.O. At rate of £250
Reading, Royal Berkshire Hospital.—Cas. O. and H.S. Each at rate of £125.
Rochdale Infirmary and Dispensary.—Jun. H.S. £200.
Royal Naval Medical Service.—Nine M.O.'s.
Ryde, Isle of Wight County Hospital.—Res. H.S. £180.
St. Albans, Middlesex Colony for Mental Defectives, Harper-lane, Shenley.—2nd Asst. M.O. £460.
St. Bartholomew's Hospital, E.C.—Asst. Administrator of Anæsthetics.
St. Helens C.B.—Asst. M.O.H. £600.
St. Peter's Hospital, Vallance-road, Whitechapel, E.—Res. Med Supt. £950.
St. Thomas's Hospital.—M.O. in charge of Physio-Therapeutic Dept.
Sheffield, Children's Hospital.—H.S. At rate of £100.
Sheffield, Royal Infirmary.—Ophth. H.S. At rate of £120. Also H.S. and H.P. Each at rate of £80.
Southend-on-Sea, General Hospital.—Obstet. Officer. £125.
South Shields County Borough.—Asst. M.O. £500.
Stafford, Standon Hall Orthopædic Hospital.—H.S. £200.
Stamford, Rutland and General Infirmary.—H.S. At rate of £250.
Stockport County Borough.—M.O.H. £1100.
Stoke-on-Trent, Longton Hospital.—H.S. £160.
Sutton, Sutton and Cheam Hospital.—Asst. Res. M.O. At rate of £150.
Torquay, Torbay Hospital.—H.P. £175.
West Bromwich, Hallam Hospital.—Res. H.P. At rate of £200.
West End Hospital for Nervous Diseases, 73, Welbeck Street, W.—Hon. Med. Psychologists for Child Guidance Unit. Also 2 Hon. Clin. Psychologists.
Wigan, Royal Albert Infirmary and Dispensary.—H.S. At rate of £150.
Willesden General Hospital, Harlesden-road, N.W.—Res. Cas. O. At rate of £100.
Wolverhampton Royal Hospital.—H.S. for Fracture and Orthopædic Dept. At rate of £100.
Woodside Hospital, Muswell Hill, N.—Res. H.P. At rate of £100.
Woolwich and District War Memorial Hospital, Shooters Hill, S.E. Res. M.O. £175.
Worcester Royal Infirmary.—H.P. Also Jun. H.S. At rate of £160 and £120 respectively.

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Oxted, Surrey.

Births, Marriages, and Deaths

BIRTHS

HARRIS.—On June 22nd, at Clifton, Bristol, the wife of H. Elwin Harris, F.R.C.S. Eng., of a daughter.

MACDONALD.—On June 26th, the wife of A. Robertson Macdonald, M.B., B.S. Lond., of Queen's Club-terrace, W., of a daughter.

MAURICE.—On June 23rd, at Savernake Hospital, the wife of James Maurice, M.R.C.S. Eng., of Marlborough, Wilts, of a daughter.

MARRIAGES

WIGLEY—BARNARD.—On June 25th, quietly, in London, John Edwin Mackonochie Wigley, M.B., B.S. Melb., to Evelyn Barnard, daughter of Mr. and Mrs. Stanley Hoare, of Cornwall-terrace, N.W.

DEATHS

PEACHEY.—On July 7th, at 16, Hillersdon-avenue, S.W., Dr. George Peachey.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

SUSSEX EYE HOSPITAL.—On July 2nd the new buildings of this hospital in Eastern-road, Brighton, were opened by Princess Victoria. They were erected at a cost of £40,000, and they consist of four wards of 10 beds each, eight private wards for paying patients, eight children's cots, and accommodation for the nursing staff.

NOTES, COMMENTS, AND ABSTRACTS

PRESSURE ON URETER BY ECTOPIC TESTIS

ALTHOUGH cryptorchidism in young adults is said to have an incidence of between 0·1 and 0·2 per cent., ectopic testis in the true sense of the term occurs much less frequently. Still less frequently does an ectopic testis give rise to symptoms in the urinary tract. Dr. George C. Prather describes such a rare case in the *New England Journal of Medicine* of March 7th, 1935. The patient, aged 27, was admitted to hospital complaining of a dull pain in the left flank of four years' duration. Abdominal examination revealed an enlarged left kidney, and an intravenous pyelogram confirmed the fact that there existed a left hydronephrosis with a tremendous dilatation of the left ureter. It was noted that the left side of the scrotum was empty. An extraperitoneal exploration of the kidney and ureter was carried out. On dissecting the ureter down to the bladder it was found that it became abruptly narrowed at the point of the crossing of the vas deferens, and on deep palpation a lump corresponding to the left testis was found lying against the posterior wall of the bladder. Since the hydronephrosis and hydro-ureter were badly infected, a nephro-ureterectomy was performed. Convalescence was uneventful and the patient was discharged free from pain 16 days after operation.

A NEGLECTED TONIC: CHARCOT'S BATH

Dr. T. PAGAN LOWE writes to suggest more general use of the form of physical treatment known as Charcot's bath. It requires, he points out, no special apparatus, for it consists merely in standing ankle deep in hot water and sponging the body locally six times. The cold sponge is applied once to each hip, then once to each shoulder, and finally to the chest and back, being followed by quick drying and brisk rubbing with a rough towel. "The bath," Dr. Lowe says, "should be taken on getting up in the morning and again the last thing at night. The rapidity with which it will contract up a dilated heart after influenza is astonishing—a fact which can be observed by anyone who cares to try it. I have seen good results many times, but one case, perhaps, may suffice by way of illustration.

A distinguished physician, after an influenzal attack, thinking his liver wanted exercise, went for a walk up a long and steep hill and thus produced an acute and extensive dilatation of his heart. When I saw him he had been treating himself by rest, two-hourly nourishment and heart tonics without any appreciable benefit, and, to use his own expression, he thought he was done for. Like many other medical men he had never heard of a Charcot's bath, but put it into use forthwith and made a rapid recovery.

The late Dr. Thomas Glynn, of Liverpool, whose house physician I was, and who brought this bath to my notice, gave it as his opinion that for nervous cases and as a general tonic this bath was the best treatment he knew. I have found it also useful in certain cases of insomnia of nervous origin even when an acute anxiety was known to be in operation. To get the best results, however, the bath must be properly administered. Simple though it be, many patients, particularly women, accustomed to the morning hot bath, require to be given it by a nurse for some days before they gain courage to give it themselves."

NURSING OF COLOTOMY

Miss KATE MAXEY, S.R.N., writes (from Bishop Auckland, Durham): Here is a practical hint for the nursing of a colotomy case. From experience I have found that a level teaspoonful of Epsom salts in warm water, followed by a cup of tea, acts after an interval of 40–45 minutes. A bed-pan is contrived consisting of a basin four inches deep and about six inches wide, covered with grease-proof paper fastened with a rubber band. A hole is cut at the centre of the paper large enough to take the colotomy, and the basin is placed at the centre of an air cushion inflated to a depth as great as that of the basin. The patient is then turned on his side over the central hole and kept in this position for three-quarters of an hour. This treatment I have found minimises the unpleasantness for the patient, and also saves soiled bandages, dressings, and garments.

THE VACCINATION QUESTION IN GERMANY

IN his capacity of Reichsärzteführer, or leader of the doctors of Germany, Dr. Wagner has issued a statement pointing out that the Government has hitherto refused to alter the present regulations concerning vaccination, which accordingly remain in force. It is not permissible to criticise the measures that the Government has seen fit to take, nor to stir up opposition to the regulations. "Therefore I rule," he says, "that the vaccination question shall not be discussed in medical and other technical periodicals." (Deut. med. Woch., July 5th, 1935, p. 1094).

THE "KLIPPON" GLARE SHIELD

THIS device, manufactured by Messrs. Theodore Hamblin Ltd., 15, Wigmore-street, London, is designed for the prevention of glare and consists of two dark celluloid shields, joined by a piece of elastic, which are made to clip on to ordinary spectacles. The shields are obtainable at all opticians, price 1*s.* 6*d.*

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
TUESDAY, July 16th.—5.30 P.M., General Meeting of Fellows.

ASSOCIATION OF CLINICAL PATHOLOGISTS.
SATURDAY, July 20th (at Princess Alice Memorial Hospital, Eastbourne), Summer Meeting. 9.45 A.M., Dr. R. A. O'Brien: Diphtheria Prophylaxis. Prof. J. W. McLeod, F.R.S.: Difficulties in Bacteriological Diagnosis of Diphtheria. Dr. A. D. Gardner: Bacteriological Aspect of Whooping-cough. Dr. L. E. H. Whitby: Glandular Fever. Dr. E. Weston Hurst: Pathology of Virus Infections. 2 P.M., Demonstrations by Dr. A. Renshaw and others. 3 P.M., Discussion on Association's pamphlet on When and How to Collect Pathological Specimens. 4.30 P.M., Dr. A. G. Shera: Sensitised Hæmolytic Streptococcal Vaccine. Dr. S. C. Dyke: Case of Aspirin Poisoning. 6 P.M., General Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, July 15th, to SATURDAY, July 20th.—ALL SAINTS' HOSPITAL, Austral-street, West-square, S.E. Course in urology.—BLACKFRIARS SKIN HOSPITAL, Blackfriars-road, S.E. Afternoon course in dermatology. Courses and clinics arranged by the Fellowship are open only to members and associates.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, July 18th.—2 P.M., Mr. Charles Donald: Hydrocephalus and Spina Bifida. 3 P.M., Dr. A. Signy: Pathological Demonstration.
Out-patient clinics daily at 10 A.M. and ward visits (except Wednesday) at 2 P.M.

ROYAL SANITARY INSTITUTE.
MONDAY, July 15th, to SATURDAY.—Congress at Bournemouth.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION
St. James's Hospital, Ouseley-road, Balham, S.W.
WEDNESDAY, July 17th.—4 P.M., Mr. V. Z. Cope: Demonstration of Surgical Cases.